From: Sent: To: Subject: Portner, Ginny Wednesday, October 30, 2002 1:58 PM STIC-Biotech/ChemLib 09/910.186

Importance: High

Please search SEQ ID Nos 9 and 10, please back translate SEQ ID NO 10. Thanks.

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> Edward Hart Technical Info. Specialist STIC/Biotech CMI 6B02 Tel: 305-9203

> > NECEVED OCT SO 2002

Searcher:
Phone:
Location:
Date Picked Up: 1/19/192
Date Completed: ///8/02
Searcher Prep/Review:
Clerical:
Online time:

TYPE OF SEARCH:	
NA Sequences:/	
AA Sequences: / +/	
Structures:	
Bibliographic:	
Litigation:	
Full text:	

VENDOR/COST (where applic.)
STN:
DIALOG:
Questel/Orbit:
DRLink:
Lexis/Nexis:
Sequence Sys.:

WWW/Internet:_____ Other (specify):____

Patent Family: Other: Pending Nucleic Acid and/or Pending Amino Acid database searches now generate two sets of results. These databases were split into to two parts to reduce the time needed to update the databases daily. The split freed up more machine time for processing searches.

Searches run against the Nucleic Acid Pending database produce two sets of results, with the Searches run against the Amino Acid Pending database produce two sets of results, with the extensions, .rnpm and .rnpn extensions, .rapm and .rapn The Pending database search results should not be left in the case because they contain data that is confidential.

Patent and Trademark Office after November 29, 2000 will be pre-published at eighteen months According to the Pre Publication Rules, every patent application received by the United States from the effective filing date. When the application is published the contents, including the sequences, will become prior art.

Published Applications NA contains nucleic acid sequences; the search results will have the Two new databases have been created to hold the pre-published sequences: extension .rnpb.

Published_Applications_AA contains amino acid sequences; the search results will have the extension .rapb.

requests that the changed application be published again. In such instances, the "1" at the end of application. The first 4 digits show the calendar year the application was published. The next 7 beginning of each calendar year. Each application published is given the next number in order. The "A" indicates a utility patent application and the "1" shows that this was the first time the application had been published. If the applicants submit changes to the application, they may digits represent when the application was published. This 7-digit number starts at zero at the Publication Number is US20021234567A1. The "US" indicates the application was a U.S. Each pre-published application is given a unique Publication Number. An example of a the number would be replaced by a "2".

Sequences in the PGPub database are public information; it is permissible to leave these results in the case. A management appear

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Copyright (o) 1939 - 2002 Compages Ltd. Od protein - protein search, using as model. Non on: November 7, 2002, 33.451 follows alignment of second from the first of the firs	able: ber of B seq l B seq l essing:	the content of the co	Pred. Mo. 18 th and 18 determent and 18

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Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against
                                                                                                                                                                                                                                                                                                                                             Claim 24; Page 41-42; 54pp; English.
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450 AA;

1 MIPFHIFSYTNMSLLKDIINBYFNNINDSKILSLQNRKNILVDTSGYNAEVSEEGDVQL 60 Indels 0; Gaps DB 21: Length 450: 100.0%; Score 2391; DB 21; 100.0%; Pred. No. 9.6e-164; .ve 0; Mismatches 0; Conservative Similarity

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421 NYLVPTVKQGNYASLLESTSTHWGFVPVSE 450

421 NYLVPTVKOGNYASLLESTSTHWGFVPVSE 450

REBGULT 2 AABO4092 ID AABO4092 standard; Protein; 450 AA. XX AABO4092 -

Botulism toxin heavy chain C-terminal sequence (serotype C) (1-APR-2001 (first entry)

Botulism; toxin; neurotoxin; heavy chaln; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium; Infection.

Synthetic. Clostridium botulinum.

W0200067700-A2. 16-NOV-2000

990S-0133865. 990S-0133868. 990S-0133868. 990S-0133869. 2000WO-US12890 99ttS-0133865 12-MAY-2000; 12-MAY-1999; 12-MAY-1999; 2-MAY-1999:

(USSA) US ARMY MEDICAL RES & MATERIAL COMMAND.

99US-0146192

12-MAY-1999; 12-MAY-1999; 12-MAY-1999; 29-JUL-1999;

Smith LA, Byrne MP, Middlebrook JL, Lapenotiere H; WPI: 2001-016048/02.

N-PSDB; AAA54486.

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New nucleic acids encoding the carboxy- or amino-terminal portions . The heavy offain of bountinum neurotoxin of serotype A-G, useful as vaccine against botulism Claim 3: Fig Sb; 73pp; English.

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182 YINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINMWIRDFYIFAKELDG
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                                                                                                                                                                                                                                                                                DB 20; Length 1291;
                                                                                                                                                     other therapeutic agents to the general circulation
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                                                                                                                                                                                                                                                                          Query Match 99.8%; Score 2386; DB 20. Best Local Similarity 100.0%; Pred. No. 8e-163; Matches 449; Conservative 0; Mismatches 0.
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                                                                                                                                                                                                                                                                                                                              301 FNECYXIIIKRIRGNINDIRVRGDIIVEDMIINNKAVGENEMKNETAYADNHSIEDIKAI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Botulinum toxin; botulism; rBoNT/C; vaccine; drug delivery;
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Synthetic.
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N-PSDB; AAX25521.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               254 THYVYDYMGHDIRINKBYYMYHIDYINRYMYANSROIVFHTRRNNDFNEGYKIIIKRIR 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266 TNVYKDYMGNDLRYNKEYYWVIDYLNRYNYANSRQIVFNTRRNNNDFNEGRIIIKRIR 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GNINDIRVRGGDILYFDMIINNKAYNLFMKNETWYADNHSTEDIYAIGLREQIKDINDNI 373
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NFLVPTLKQNEDSEQSINFSYDISNNAPGYNKWPFVTVTNNMAGNMKIYINGKLIDTIKV 193
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26 ALLKDIINEYPNNINDSKILSLONRKNTLVDTSGYNAEVSEBSDVQLNPIPPPDFKLGSS 85
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                                                                                                                                                                                                                                                                                                                                                                                                        Host cell containing recombinant expression vector encoding 
Costridium botulinum type B or E coxin - useful to treat humans and other animals arises of intoxication with clostridial toxin
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Botulinum neurotoxin type D; BoNT; botulism; non-toxic; vaccine; poison;

    botulinum type D toxin amino acid sequence.

                                                                                                                                 N-PSDB; AA298630, AA298631.
20-JUN-2000 (first entry)
                                                                                                   (AGRI-) AGRIC RES COUNCIL.
                                         Clostridium botulinum
                                                                                                                            WPI: 2000-205375/18
                                                    WO200005252-A1
                                                                                        22-JUE-1998;
                                                                             20-701-1999;
                                                                                                                De Bruyn EE,
                                                                                                                                                               neurotoxins
                                                                03-FEB-2000
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99WO-IB01301 982A-0006538

Botha AD;

This agence represent the main of the septem of a parthaction of main total femoments the september of Clasticidum bothliams type D coxin mean. Lottliams mortain the main of the continuous management of Clasticidum bothliams in the Clasticidum bothliams in the control in queen bothliam september of the C. bothliams mortain and animals. The control intended to the C. bothliams of controls in resident to more the main and of the C. bothliams of controls in the control in the control of the C. bothliams of controls in the control of the C. bothliams of controls in the control of the C. bothliams of controls in the control of the C. bothliams Non-toxic immunogenic derivative of Clostridium botulinum meurotoxin Type D, useful in vaccines for protection against botulism, comprises Eless, one anino acid mucalion not present in the wild type D Claim 3, 4; Page 54-57; 66pp; English.

Length 399; Indels 66.5%; Score 1589; DB 21; 76.0%; Pred. No. 3.3e-106; 563 33; Mismatches Best Local Similarity Matches 307; Conservative Local Similarity Query Match

399 AA;

Sequence

TYTHNWAGNMKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINMKI 229 RDFYIFAKELDGKDINILFNSLQYTWVKDYWGNDLRYNKEYYMVNIDYLHRYMYANSRQ 289 110 SNIPGYTIIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGYNKWFFV 169 SNLPGYTLIDSVKNNSGRSIGIISNFLYFTLKQNENSEQDINESYDISKNAAGYNKMFFV 120 50 AEVSEEGDVOLNPIFPFDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWV 109 1 AEVRVEGGNVQLNPIFPFDFKLGSSGDDRGKILVTQNENIVINAMYESFSISFWIRINKWV 60 19 230 à à g ö 8 ð

RDFITFAKELDDKDINILFNSLOYTNVKDYMGNDLRYDKEYYMINVNYMRRYMSKKGNG 240 IVPNTRRNNNDENBGYKIIIKRIRGNINDTRVRGGDILFFDMTINNKAYNLFMKNETMYA 349 296 PSRNLGIDLVPLGALDQPMDEIRKYGSFIIQPCNTEDYYASQLFLSSNATINRCGILSIG 355 IVPNITRKNNNDFNEGYKIIIKRIRGNINDIRVRGENVLYFNTTIDNKOYSL----GMYR 295 S50 DNHST-EDIYAIGLEEGTED-INDNIIPQIOPMNNTYYASQIPESNFNGENISGICSIG 407 81 용 융

AAB04093

RESULT 6 AAB04093 ID AAB0

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21 VKNNSGWSIGIISNPLVFTLKQNEDSEQSINPSYDISHNAPGY-NKWPPVTVTNNAMGGNM 179
                                                                                                                                                                                                                                                                                                                                                                                                              191 KLYINGELKQSQKIEDLDEVKLDKTIVFGIDENID------ENOMIMIRDFWIFSKEL 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        343 SNEDINIVYEGGILRAVIKDYMGNPLKFDTEYYIINDAYIDRYIAPESAVLVLVQYPDRS 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300 DENEGYKIIIKRIRGNTNDTRVRGGDILYEDMTINNKAYNLFMKNETMYA---DNHSTED 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              357 IYAIGLREQTKDINDNIIPQIQPMNHTYYYASQIFKSNFNGENISGICSI-GTYRFRLGG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       363 VYALKLQSULGNYGIG-IFSIRNIVSKNKYCSQIP-SSFR-ENIMLLADIYKFWRFS--- 416
                                                                                       62 PIPPPDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWVSNLPG-YTIIDS 120
                                                                                                                                                    74 TIYTNDFKLSSSGD---KLIVNLNNNILYSAIYENSSVSFWIKISKDLTNSHNEYTIINS 130
                                                                                                                                                                                                                                                                131 IBQNSGWRLCIRNGNIEWILQDVNRNYKSLIPDYSESLSHTGYTNKWFPVIITNNINGYM 190
                                                                                                                                                                                                                                                                                                                                                        180 KIYINGKLIDTIKVKELIGINFSKTITFEINKIPDIGLITSDSDNINMAIRDFYIFAKEL 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        303 KLYZGNPITIKSVSDKNPYSRILNGDNIILHMLYNSRKYMIRDIDIIYATOGGDCSONC 362
14 TMPFHIESYTUNGLAKDIINEYFNSINDSKILSLQNKKNRALVDTSGYRAKURGLWOJA 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Host cell containing recombinant expression vector encoding 
Licerration botulinum type sor E coxin - useful to treat humans and other animals at risk of intextention with clostridial toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240 DGKDINILFNSLQYTNVVKDYHGNDLRYNKEYYMVNIDYLNRYMYANSRQIVFNTRRNNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Antitoxin; vaccine; neurotoxin; toxin D; intoxication; immunogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clostridium botulinum type D toxin C fragment
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     416 DWYRHNYLVPTVKQGNYASLLESTSTHWGFV 446
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW68398 standard; Protein; 451 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium botulinum serotype D.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-DEC-1998 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI: 1998-230234/20.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New nucleic acids encoding the carboxy or amino-terminal portions of the heavy chain of Dottlinum neurotoxin of serotype A-G, useful as vaccine against botulism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Botulism, toxin; neurotoxin; heavy chain; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36.34; Score 867.5; DB 22; Length 451;
43.24; Pred. No. 2.5e-54;
ilve 84; Mismatches 145; Indels 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Botulism toxin heavy chain C-terminal sequence (serotype D).
                                                      356 SYSPKLGDDYWPNEYLIPVIKIEHYASLLESTSTHWVPASE 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Smith LA, Byrne MP, Middlebrook JL, Lapenotiere H:
             408 TYRFRIGGD-WYRHNYLVPIVKQGNYASILESTSTHWGFVPVSE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (USSA ) US ARMY MEDICAL RES & MATERIAL COMMAND.
                                                                                                                                                                                                                                     AAB04093 standard; Protein; 451 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 3; Fig 6b; 73pp; English.
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99US-0133867.
99US-0133868.
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99US-0133873.
99US-0146192.
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                                                                                                                                                                                                                                                                                                                                                                      11-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic.
Clostridium botulinum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI: 2001-016048/02,
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12-NAY-1999; 12-NAY-1999; 12-NAY-1999; 12-NAY-1999; 29-JUL-1999; 12-MAY-1999: 16-NOV-2000

2×5×5×5**Comer ferra OCIO PC 104 OS-05-2000**2388888888888

2 TIPPNIPSYTNNSLLKDIINEYPNNINDSKILSLQNRKNTLVDTSGYNAEVSEGDVQLN 61

Sequence Query Match 99WO-US15570. 98US-0092416.

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Dotulinum neurotoxin; heavy chain; BoWY: serotype E;
traninal fragment; verecenan equine encephalitis virus replicon;
VEB; botulism; vaccine; diagnosis; drug screening.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clostridium botulinum
                                                                                                    451 AA;
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                                                                                                      Sequence
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8566666666666888x8
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Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against
                                                                                                                                                                           Lee JS, Pushko P, Smith JF, Parker M, Dertzbaugh MT, Smith
                                                                                                                                  (USME-) US MEDICAL RES INST INFECTIOUS DISEASES
                                                                                                                                                                                                                                                                                                                                                                          Claim 26; Page 43-44; 54pp; English.
                                                                                                                                                                                                                     WPI; 2000-160827/14.
                                                                                                                                                                                                                                            N-PSDB: AA287215.
                                                                 10-JUL-1998;
12-MAY-1999;
                           09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                botulinum
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Best Local 8
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                                                                                                                                                                                                                                                                                                                                         Synthetic botulinum neurotoxin serotype E (BoNTE) C-terminal fragment.
of Chortridian Brillian Section of the Intitition Sequence of Chortridian Brillian Section of Chortridian Brillian Section of Chortridian Brillian Section of Section Section
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The invention states to now vocies that indees protective immune response assists between the control of the co expression in yeast. 449 AA

65; DB 21; Length 449; 24.7%; Score 589.5; DB 21; Length 32.6%; Pred. No. 2.3e-34; Live 90; Mismatches 159; Indels Best Local Similaricy June Matches 152; Conservative Similarity

17;

Gaps

336 AKELDGKDINILFNSIAYTNVVKDYWGNDLRYNKEYTMVNIDYLMRYM--YANSRQIVFN 293 248 DKELDETELGTLY SNEPNTNILKDFWGNYILKPKEYYLLANVLKPNNFIDRRKDSTLSINN 307 294 TRRN---NNDFNEGYKILIKRI-RGNTNDFRVRGGDILYEDMFINNKAYNLFMKNETMYA 349 8 à à

11-APR-2001

AB04094 AAB04094

8

infection. Synthetic 16-NOV-2000.

9x5x**Cornect from: 1 09x50 1 86 or 03: 40 5: 200 4**25 558 558 568 568 568 568

17; Page

65,

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Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum
toxin serotypes A-G, is used for inducing an immune response against
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294 TRR---NNDFNEGYKIIIKRI-RGNINDTRVRGGDILYFDMFINNKAYNLFMKNETNYA 349
                                                                                                                                                                                 62 PIPPPDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRI----NKWVSNLPGYTI 117
                                                                                                                                                                                                                          99 PINKNOF--GIYNDKLITELNISQNDYIIYDNKIKNFSISFWYRIPNIDNKLYNVNNEYII 136
                                                                                                                                                                                                                                                                                                            118 IDSVK-NNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFPVTVTNNM 175
                                                                                                                                                                                                                                                                                                                                                            137 INCMRDANSGWKVSLNHWEITHTQDRAGINGKLAFWYGNANGISDYINKWIFVITHDR 196
                                                                                                                                                                                                                                                                                                                                                                                                                                        176 NGNMKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINMMIRDFYIF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     197 LGDSKLYINGNLIDQKSILNLGNIHVSDNILFKIVNCSYTRYI-----GIRYFNIF 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236 AKELDGKDINILFNSLQYTNVVKDYMGNDLRYNKEYYMVNIDYLNRYM--YANSRQIVFN 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                248 DKELDETELQTLYSNEPNTNILKDFWGNYLLYDKEYYLLINVLKPNNFIDRRADSTLSINN 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  308 IRSTILLANRLYSGIKVKIQHVNNSSTNDNLVRKNDQVYINFVASKT--HLF----PLYA 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                350 DNHSTEDIYALGLREQTKDIND -- NIIPQIQPMNNTYYYASQIFKSNFNGBNISGLCSIG 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             362 DIATIN-----KEKIIKISSSGNAPNOVVMMSVGNNCIMNFKNW-NGNM----IG 407
                                                                                                             19 SIPFKLSSYTDDKILISYFNKFFKRIKSSSVLNMRYKNDKYVDTSGYDSNININGDVYKY 78
                                                      2 TIPFNIFSYTNNSLLKDIINEYFNNINDSKILSLONRKNTLVDTSGYNAEVSEEGDVQLN 61
90; Mismatches 159; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        408 TYRER----LGGDMYRHNYLVPTVKOGNYASLLESTSTH---WGFV 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408 LIGEKADTVVASTWY -----YTHMRDHTNSNGCFWNFI 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Botulinum neurotoxin; heavy chain; BoNT; serotype A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Venezuelan equine encephalitis virus replicon;
VEE: botulism; vaccine; diagnosis; drug screening
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USME-) US MEDICAL RES INST INFECTIOUS DISEASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Native botulinum neurotoxin serotype A (BONTA).
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Misc-difference 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY77140 standard; Protein; 837 AA
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      Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AA287218.
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Matches 152;
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Thin heavy tehin of bothlinum neurotoxin of serotype A-G, useful as
vaccine against bothlism
      Botulism; toxin; neurotoxin; heavy chain; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 589.5; DB 22; Length 449;
Pred. No. 2.3e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sotulism toxin heavy chain C-terminal sequence (serotype E).
                                                                                                      408 TYRPR----LGGDWYRHNYLVPTVKQGNYASLLESTSTH---WGFV 446
                                                                                                                                               408 LLGFKADTVVASTWY-----YTHMRDHTNSNGCFWNFI 440
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Smith LA, Byrne NP, Middlebrook JL,
                                                                                                                                                                                                                                                                                                                          AAB04094 standard: Protein; 449 AA
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990S-0133868.
990S-0133869.
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Best Local Similarity
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12-MAY-1999;
12-MAY-1999;
29-JUL-1999;
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12-MAY-1999;
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Smith

Sequence

Manganese superoxide dismutase; Mn-SOD; SOD; neuronal cell; metronal cell Largeting componer; NCTC; neuronal disease; oxidative stress; ischemic stroke; traums; ParKinson's disease;

Huntington's disease; motor neurone disease;

botulinum neurotoxin serotype A.

Synthetic. Bacillus stearothermophilus. Clostridium botulinum.

NO200028041-A1 35-NOV-1999; 1861-VON-20 18-MAY-2000

Hallis B, Silman N;

Sutton JM. WPI; 2000-376553/32.

Shone CC.

(MICR-) MICROBIOLOGICAL RES AUTHORITY

99WO-GB03699. 98GB-0024282.

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                                                                                                                                                                                                                   The invention relates to novel vaccines that induce a protective immune
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      343 KNETMYADNHSTEDIYAIGLREGIYDINDIIFQIQPMNNTYYYASQIFKSNFWSENISG 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----ATNASQAGVEKILSALEIPDVGNISQVVVMKSKNDGGIINKC-KMNLQDNNGND 793
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 236 AKELDGKDINILENSLQYINVVKDYWGNDLRYNKEYYMVNIDYLNRYMYANS-----
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The procultions are proceeding the induces a proceeding september of the investor of the inves
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 21; Length 837;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           403 ICSIGTYRFRIGGDWYRHNYLVPTVKQGNYASILESIS----THWGFVPVSE 450
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The present resultant systems as a construct of the Interestion competition can be classed by threads the SSD polypetide a linker that can be classed by threads and a how you can describe the state of the state of
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         117 IIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNNM 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               580 IDKNOIGLFNLESS-----KIEVILKNAIVYNSMYENFSTSFWIRIPKYFNSISLNNEYT 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            795 LANSKIYINGRLIDQKPISNLGNIHASNNIMPKLDGCRDT-----HRYIWIKYFNLF 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----RQIVENTR-RNNNDFNEGYKIIIKRIRGNTNDTRVRGGDILYFDMTINNKAYNLFM 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel composition, comprising superoxide dismutase linked by a cisavale linker to a neuromal coll targeting component useful for delivering superoxide dismutase to neuromal cells to treat isotemat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L76 MGNMKIYINGKLIDTIKVKELIGINFSKTITPEINKIPDIGLITSDSDNINMWIRDFYIF
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31.6%; Pred. No. 1.1e-33;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page 41-44; 65pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 149;
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990 -----ATNASQAGVEXILSALEIPDVGNLSQVVVMKSKNDQSITNKC-KMNIQDNNGND 1042
645 IPPOLSKYUDNORLLSTETETKNIINTSILALRYESNHLIDLSKYADSKYNFDP 704
                                                                                               63 IFPFD---PKLGSSGEDRGKVIVTQNENIVTNSMYESFSISFWIRINKWVSNLP---GYT 116
                                                                                                                                                         705 IDKNOIQLFNLESS-----KIEVILKNAIVYNSHYENFSTSFWIRIPKYFNSISLNNEYT 759
                                                                                                                                                                                                                           117 IIDSVXNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNNM 175
                                                                                                                                                                                                                                                                                             760 IINCMENNSGWKVSLNYGELIWILQDTQEIKQRVVFKYSQMINISDYINRWIFVTITNNR 819
                                                                                                                                                                                                                                                                                                                                                                                                                                 820 LANSKIYINGRLIDQRPISHLGNIHASHNIMFKLDGCRDT-----HRYIWIKYFNLF 871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            872 DXELNEKEIKDLYDNOSNSGILKDFWGDYLQYDKPYYMLNLYDPNKYVDVNNVGIRGYMY 931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ----ROIVENIR-RNNNDFNEGYKIIIKRIRGNINDTRVRGGDILFDMIINNKAYNLFM 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          932 LKGPRGSVMTYLYLNSSLYROTKFIIKKYAAGGNKDNIVRNDRYTNVVXNKEYRL-- 989
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                                                                                                                                                                                                                                                                                                                                                                      176 MGNMKIYINGKLIDTIKVKELIGINFSKTITFRINKIPDIGLITSDSDNINMWIRDFYIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  236 AKELDGKDINILENSLQYINVVKDYKGNDLRYNKETYNVNIDYLNRYMYANS-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             403 ICSIGTYRFRIGGDWTRHNYLVPTVKQGNYASILESTS----THWGFVPVSE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1043 IGPIGFHQF -----NNIAKLVASNWYNRQIERSSRTLGCSWEFIPVDD 1085
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR95010 standard; Protein; 1296 AA

 botulinum type A neurotoxin.

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95US-0405496.
95US-0422711.
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16-MAR-1995;
14-APR-1995;
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Williams JA;
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                                                                                                      -----ATMASQAGVEKILSALEIPDVGNLSQVVVMKSKNDGGITNKC-KMNLQDNNGND 1017
                                    343 KNETHYADNHSTEDIYAIGLREQTKDINDNIIPQIQPMANTYYYASQIPKSNFNGENISG 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Novel composition, comprising superoxide dismutase linked by a 
Clavable linker to a neuronal cell targeting component useful for 
delivering superoxide dismutase to neuronal cells to treat ischemia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24.5%; Score 586.5; DB 21; Length 1092; 31.6%; Pred: No. 1.1e-33; tive 82; Mismatches 186; Indels 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Manganese superoxide dismutase; Mr-SDD; SDD; neuronal cell;
neuronal cell targeting componen; NGTC incuronal disease;
oxidative stress; isohemic stroke; trauma; Parkinson's disease;
                                                                                                                                                                                                                                          1018 IGPIGFHQF-----NNIAKLVASNWYNRQIERSSRTLGCSWEFIPVDD 1060
                                                                                                                                                                               ICSIGTYRPRIGGDWYRHNTLVPTVKOGNYASLLESTS----THWGFVPVSE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A manganese superoxide dismutase (Mn-SOD) construct.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disease: motor neurone disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shone CC. Sutton JM. Hallis B. Silman N;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (MICR-) MICROBIOLOGICAL RES AUTHORITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 51-54; 65pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                  AAY93310 standard: protein: 1092 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     botulinum neurotoxin serotype A.
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Bacillus stearothermophilus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-NOV-1998;
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                                                                                                      965
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1 mmunoqen

Clostridium botulinum type A neurotoxin (AAR95010) is processed to form

Claim 4; Page 344-350; 434pp; English.

55; Gaps

3 IPPNIESYTNNSLLKDIINEYFUNINDSKILSLQNRKNTLVDTSGYNAEVSEEGDVQLNP 62

Conservative

Best Local Similarity Matches 149; Conserva

Thalley BS;

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ï 55; Gaps DB 17; Length 1296; 186; Indels 24.5%; Score 586.5; DB li ilarity 31.6%; Pred. No. 1.4e-33; Conservative 82; Mismatches 186, 1296 AA; Local Similarity 149; Sequence Query Match Sest Loca

IPFNIFSYTNNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEGDVOLNP 62

964 IINCMENNSCHWYSLNYGEIIHTLQDIQEIKQRVVEKYSQMINISDYINRNIFVTIINNR 1023 MONMKIYINGKLIDTIKVKELIGINESKTITFEINKIPDIGLITSDSDMINMAIRDFYIF 235

& Copied from 10910186

1024 LNNSKIYINGRLIDQKPISNIGNIHASNNIMFKLDGCRDT-----HRYIWIKYFNLF 1075 236 AKELDGKDINILFNSLQYINVVKDYWGNDLRYNKEYYWVNIDYLNRYMYANS-----

1247 IGFIGEHOF----NNIAKLVASNWYNROIERSSRTLGCSWEFIPVDD 1289

on:05-405

AAY93308 standard; protein; 1070 AA.

AAY93308;

04-SEP-2000 (first entry)

Manganese superoxide dismutase; Mn-SOD; SOD; neuronal cell; neuronal cell tergeting component; NGT; neuronal disease; oxidative stress; ischemic stroke; trauma; Parkinson's disease; Muntigoton's disease; motor reurone disease. botulinum neurotoxin serotype B.

A manganese superoxide dismutase (Mn-SOD) construct.

Bacillus stearothermophilus Clostridium botulinum. Synthetic

W0200028041-A1 18-MAY-2000.

99WO-GB03699 05-NOV-1999;

98GB-0024282 05-NOV-1998;

Silman (MICR-) MICROBIOLOGICAL RES AUTHORITY. Hallis B, Sutton JM, Shone CC,

WPI; 2000-376553/32

Movel composition, comprising superoxide dismutase linked by a composition theorem of built targeting component useful for Colewable linker to a teneroal of largeting component useful for delivering superoxide dismutase to neuronal cells to treat isothemia Disclosure; Page 45-47; 65pp; English

The present response regressia a construct of the invention conscription on the circumstance represents a construct of the invention conscribing an expectation and helps you have determined from buttlem connection activities of the construction activities of the section for the construction activities and the section for the construction activities of the section obsertion activities of the section obsertion activities of the section of the construction of the c

1070 AA; Sequence

23. Gaps 3 IPPNIESYTNNSLLKDIINEYFNNINDSKILSLONRKNTLVDISGYNAEVSEBGDVQLAP 78; Length 1070; 82; Mismatches 168; Indels 24.3%; Score 581; DB 21; 32.9%; Pred. No. 2.8e-33; Matches 161, Conservative Similarity Query Match Local

575 --KNOPKLTSSA--NSKIRVTONONIENSVELDPSVSFWIRIPKYKNDGIQNYIHNEYT 730 615 NPFDESIYTNDTILIEMPNKYNSEILNNIILNIRYKDNMLIDLSGYGAKVEVYDGVELND 674 63 IFPPDFKLGSSGEDRGKVIVTQNENIVYNSMYESPSISFWIRINKW----VSNL--PGYT 116 a 쉱 ò

117 IIDSVKNNSGWSIGIISNPLVFTLKQNEDSEQSINPSYDISNNAPGY-NKWFFVTVTNNM 175 ò

> 8 셤

789

290 841 FNIELSOSNIEBRYKIQSYSBYLKDFWGNPLMYNKRYYMFNAGNKNSYIKLKKDSPVGEI 900 291 VPNTRRNNN------DENEGYKIIIKRIRGNT---NDTRVRGGDILVFD-MILNNK--- 336 235 FAKELDSKDINILENSIQYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYMYANS----RQI à a ô

960 YTYKYFKKEE------EKLFLAPISDSDEFYN---TIQIKEYDEQPTYSCOLLFKK- 1006 901 IJRSKYNQNSKYINYRDLYIGEKFIIRR-KSNSQSINDDIVRKEDYIYLDFFNINQEWRV 959 337 -AYNLEMKNETHYADNHSTEDIYAIGLREQTKDINDNIIFQIQPMNNTYYYASQ-IFKSN 394 g 음 ô

NWOFIPKDE 1066 RESULT 15 1058

442 BWGFVPVSE 450

ò a ò 8 a à 21: comprising The present sequence recreases to construct of the invention, constituting an inconductal loader sequence from human assignment of construction of construction (no. 2017) as possible assignment of the construction of the const 640 MPFDLSIYTNDTILIEMFNKYNSEILNNIILNELKYKDNNLIDLSGYGAKVEVYDGVELND 699 63 IPPFDFKLGSSGEDRGKVIVTQNENIVYNSMYESPSISFWIRINKW----VSNL--PGYT 116 700 --KNOFKLISSA--NSKIRVTQNONIIFNSVFLDPSVSFWIRIPKYKNDGIQNYIHNEYT 755 117 IIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNRM 175 78; Gaps 3 IPPNIFSYTNNSLLKDIINBYFNNINDSKILSLONRKNTLVDTSGYNAEVSEBGDVQLNP 62 Novel composition, comprising superoxide dismutase linked by a cleavable linker to a neuronal cell trayeting component useful for delivering superoxide dismutase to neuronal cells to trake is schema. Manganese superoxide dismutase; Mn-SOD; SOD; mutonal cell; meturoal call targeting component. NCU; meturoal disease; oxidative stress; ischemic stroke; teums Parkinson's disease; Bintington's diseases motor meturok disease; Dotulinum meturoxidi serocype 8. 24.3%; Score 581; DB 21; Length 1095; 32.9%; Pred. No. 2.88-33; 14ve 82; Mismatches 168; Indels 78; A manganese superoxide dismutase (Mn-SOD) construct. Shone CC, Sutton JM, Hallis B, Silman N; (MICR-) MICROBIOLOGICAL RES AUTHORITY. Disclosure; Page 54-57; 55pp; English AAY93311 standard; protein; 1095 AA 99WO-GB03699. 98GB-00242B2. Homo sapiens. Sacillus stearothermophilus. 04-SEP-2000 (first entry) Best Local Similarity 32.99 Matches 161; Conservative motor neurone diseases Clostridium botulinum WPI; 2000-376553/32. 1095 AA; MO200028041-A1 05-NOV-1998; 05-NOV-1999; 18-MAY-2000. Sequence Synthetic. Query Match AAY93311; 9 ò

176 MONMKIYINGKLIDTIKVKELTGINPSKTITPEINKIPDTGLITSDSDNIN-MMIRDFYI 234

985 YTYKYFKKEE-----EKLELAPISDSDEFYN---TIQIKEYDBQPTYSCOLLFKK- 1031 1032 -DEESTDEIGLIGIHRFYESGIVFEEYKDYFCISKWY-----LKEVKRKPYNLKL---GC 1082 366 PNTELSQSNIEBRYKIQSYSEYLKDFWGNPLMYNKEYYMFNAGNKNSYIKLKKDSPVGEI 925 291 VFWTRRNN------DENEGYKIIIKRIRGNT---NDTRVRGGDILYFD-MINNK--- 336 926 LTRSKYNQNSKYINYRDLYIGEKFIIRR-KSNSQSINDDIVRKEDYIYLDFFNLNQEWRV 984 337 -AYNLEMKNETHYADNHSTEDIYAIGLREQTKDINDNIIFQIQPMNNTYYYASQ-IFKSN 394 395 FNGENISGICSIGTYRPRIGG------DMYRHNYLVPTVKGGNYASLIESTST 441 235 FAKELDGKDINILFNSLQYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYMYANS----RQI 290 Search completed: November 7, 2002, 14:43:09 Job time : 67 secs 1083 NWOFIPKDE 1091 442 HWGFVPVSE 450

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Application Applic
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Sequence 1
Sequence 1
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Sequence 6
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PRELICANT TRAINER SEGONS S.
PRELICANT PROPERTY N.
TITLE OF INVESTION VACIUE AND ANTICOXIN FOR TEACHERY P.
TITLE OF INVESTION VACIUE AND ANTICOXIN FOR TEACHERY P.
TITLE OF INVESTION PROPERTY OF SEGONS SEGONS
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CURRENT MACHINE MAGNET 1.0, VERSION 1.10
CURRENT MACHINE MAC
                                           ADDRESSEE: MEDLEN & CARROLL, LLP
STREET: 220 MONTGORERY STREET, SUITE 2200
CITY: SAN PRANCISCO
STATE: CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALIGNMENTS
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PILNG DATE: 16-MAR-1995
APPLICATION PATE:
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FILING DATE: 25-0CT-1994
PRIOR APPLICATION DATA:
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FILING DATE: 02-DEC-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE: CALIFORNIA
COUNTRY: UNITED STATES OF AMERICA
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FILING DATE: 04-DEC-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 07/429,791
FILING DATE: 31-CAT-1989
ATTORNEY/AGENT INFORMATION:
NAME: INSOLIA, DIENE E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
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Patent No. 5736139
GERBAL INFORMATION:
APPLICANT: KINK, JOHN A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40,027
        REGISTRATION NUMBER:
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US-08-480-604A-28
        Sequence 23 Appl.
Sequence 23 Appl.
Sequence 24 Appl.
Sequence 25 
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score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
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(without alignments)
509.243 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MIIPFNIFSTHNSLLKDII.......NYASLLESTSTHWGFVPVSE 450
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                                                    GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd.
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                                                                                                                                                                                                                                                                                               7, 2002, 14:43:01
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Maximum Match 100%
Listing first 45 summaries

    protein search, using sw model

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Gapop 10.0 , Gapext 0.5
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Match Length DB
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1136 LKGPROSVMITNIYLNSSLYRGIKFIIKKYASGNKDNIVRNNDRVZINVVVKNKEYRL-- 1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1194 -----ATMASQAGVEKILSALEIPDVGNLSQVVVMKSKNDGGITNKC-KMNLQDMNGND 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      288 ----RQIVFNIR-RNNNDFNEGYKIIIKRIRGNINDTRVRGGDILYFDWIINNKAYNLFM 342
                                                                                                                                                                                                                                                                                                                                                                                63 IPPPD---PKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWYSNLP---GYT 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IDRNOIQLFWLESS-----KIEVILKNAIVYNSMYENFSTSFWIRIPKYFNSISLANEYT 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 IIDSVKNNSGWSIGIISNFLVFTLKONEDSGOSINFSYDISNNAPGY-NKWFFVTVTNNM 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MONNKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINMMIRDFYIF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 236 AKELDGKDINILPNSLQYTWVVKDYMGNDLRYNKEYYWVNIDYLARYMYANS----- 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           343 KNETMYADNHSTEDIYAIGEREGIKDINDNIIFOLOPMNNTYYASQIFKSNFNGENISG 402
                                                                                                                                                                                                                                                                                                              55; Gaps
                                                                                                                                                                                                                                                                                                                                                        3 IPPNIFSTINSLLKDIINEYFNNINDSKILSLONRKNILVDTSGYNAEVSEEDDVQLNP 62
                                                                                                                                                                                                                                                               Owery Match 24.5%; Score 586.5; DB 1; Length 1296; Best Local Similarity 31.6%; Pered; No. 256-29; Sec. Matches 149; Conservative 82; Mismatches 186; Indels 55; Matches 186.5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                403 ICSIGTYRFRIGGDWYRHWYLVPTVKQGNYASLLESTS----THWGFYPVSE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1247 IGFIGFHQF-----NNIAKLVASNWYNRQIERSSRTLGCSWEFIPVDD 1289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: WILLIAMS, JAMES A.
TITLE OF INVENTION: VACCIONE FOR CLOSTRIDIUM BOTGLINUM
TITLE OF INVENTION: NEUROPOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEE: MEDLEN & CARROLL, LLP
: 220 MONTGOMERY STREET, SUITE 2200
SAN FRANCISCO
    OPHD-01763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JMBER: US/08/405,496A
16-MAR-1995
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W.DO-415-496A-28

W.DO-415-496A-28

Sequence 28 Application US/08405496A

Searsant Invosavation:
REFERENCE/DOCKET WUMBER: OPHI
TELECOMMUNICATION INVORMATION:
TELEFAX: (415) 705-8410
TELEFAX: (415) 97-838
INFORMATION FOR SED ID NO: 28
SEQUENCE CHRARATESICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Rele
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/
FILING DATE: 16-MAR-199
                                                                                                                                                                                                 MOLECULE TYPE: protein
US-08-480-504A-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: CALIFORNIA
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM:
                                                                                                                                                           amino acid
                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94104
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                                                                                                                                                       TYPE: ami
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OPHD-01308
                                                                                                               04-DEC-1992
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APPLICATION DATA:
RILING DATE: 31-0CT-1983
ATTORNEY AGENT INFORMATION:
                                                                                US 08/161,907
                                  US 08/329,154
                                                                                                                                                                                                             NAME: INGOLIA, DIANE E.
                                                                                                                                                                                                                                                                        FELECOMMUNICATION INFORMATION:
                               APPLICATION NUMBER: US 08
FILING DATE: 25-OCT-1994
PRIOR APPLICATION DATA:
                                                                            APPLICATION NUMBER: US 08
FILING DATE: 02-DEC-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 1296 amino acids
                                                                                                                                                                                                                                         REGISTRATION NUMBER: 40,
                                                                                                                                                                                                                                                                                                       TELEFAX: (415) 397-8338
INFORMATION FOR SEQ ID NO: 2
                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
NOLECULE TYPE: protein
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                         TELEPHONE:
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11; Gaps Length 1296; Matches 149; Conservative 82; Mismatches 186; Indels DB 2; 24.5%, Score 586.5, DB 2; 31.6%; Pred, No. 2.6e-39; Best Local Similarity Query Match

909 IDKNOIQLENLESS-----KIEVILKNAIVYNSMYENFYSTSFWIRIPKYFNSISLNNEYT 963

1247 IGFIGFHQF-----NNIAKLVASNWYNRQIERSSRTLGCSWEFIPVDD 1289 Sequence 28, Application US/08915136 Patent No. 6290960 US-08-915-136-28

APPLICANT: KINK, JOHN A. APPLICANT: THALLEY, BRUCE S. GENERAL INFORMATION: APPLICANT: APPLICANT:

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1136 LKGPRGSVMTTNIYLNSSLYRGTKRIIXKYAAGGNKDNIVRNNDRVXINVVVKXKEYRL-- 1193
                                                                                                                                                                                                                                                                                                                                                                                                        1194 -----ATMASQAGVEKILSALEIPDVGNLSQVVVKKSKNDQGITNKC-KWNLQDNNGND 1246
                                                                              1076 DKELNEKEIKDLYDNOSNSGILKDFWGDYLQYDKPYYHLYDPWKYVDVNNVGIRGYMY 1135
                                                                                                                                                                                                                                                                                                                         343 KNETMYADNHSTEDIYAIGLREQTKDINDNIIFQIQPMNWTYYYASQIPKSNFNGENISG 402
                               236 AKELDGKDINILFNSLQYINVVKDYMGNDLRYNKEYYMVNIDYLNRYNYANS----- 287
                                                                                                                                                                                    288 ----ROIVFNTR-RNNNDFNEGYKIIIKRIRGNINDTRVRGGDILYFDMTINNKAYNLFM 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               403 ICSIGTYRFRIGGDWYRHNYLVPTVKQGNYASLLESTS----THWGFVPVSE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1247 IGFIGFEGF----NNIAKLVASNWYNRQIERSSRFLGCSWEFIPVDD 1289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLOANT TRALLEY BRIDES S.
APPLOANT TRALLEY S.
APPLOANT T
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APPLICATION NUMBER: US/08/480,604A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: MEDLEN & CARROLL, LLP
STREET: 220 MONTGOMERY STREET, SUITE 2200
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CHARGE PROCESSES AND THE 1995
APPLICATION NUMBER - PRICE APPLICATION NUMBER -
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FILING NATE: 14-APR-1995
FRICH APPLICATION DATA: US 08/405,496
APPLICATION UNMBER: US 08/405,496
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16-MAR-1995
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 4
US-08-480-604a-23
; Sequence 23, Application US/08480504A,
patent No. 5736139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
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TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (415) 705-8410
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FILING DATE: 04-DEC-1992
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ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
NEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 25-OCT-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               02-DEC-1993
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INFORMATION FOR SEQ ID NO: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: INGOLIA, DIANE E.
REGISTRATION NUMBER: 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PILING DATE: 16-MAR-:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: SAN FRANCISCO
STATE: CALIFORNIA
COUNTRY: UNITED STAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SECUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1024 INNSKIYINGRIIDQKPISNIGNIHASNNIMPKLDGCRDT-----HRYIWIKYFNLF 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 IFPFD---FKLGSSGEDRGKVIVTQNENIVYNSNYESFSISFWIRINKWVSNLP---GYT 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           909 IDXNOIQLPRILESS-----KIEVILKNAIVYNSMYENPSTSFWIRIPKYFNSISLNNEYT 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117 IIDSVXNNSGWSIGIISNPLVFTLKQNEDSBOSINFSYDISNNAPGY-NKNPPVTVFNNM 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       176 MGNMKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINMWIRDFYIF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      849 IPFOLSKYVDNORLLSTFTEYIKNIINTSILNLRYESNHLIDLSRYASKINIGSKVNFDP 908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24.5%; Score 586.5; DB 4; Length 1296; 31.6%; Pred. No. 2.6e-39; Live 82; Mismatches 186; Indels 55;
FIRCA, JOSEPH R. STARFORD, DUGLAS C. STAFFORD, DUGLAS C. WANTION: VACCINE AND ANTITOXIN FOR TREATMENT AND VENEION: PREVENTIN OF C. DIFFICILE DISEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                           ADDRESSEE: MEDLEN & CARROLL, LLP
STREET: 220 MONTGOMERY STREET, SUITE 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 40,027
REFERENCE/DOCKET NUMBER: OPHD-01763
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08/405,496
FILING DATE: 16-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 08/329,154
FILING DATE: 25-0CT-1994
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FILING DATE: 31-0CT-1989
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/915,136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/480,604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (415) 705-8410
TELEPAX: (415) 397-8338
INFORMATION FOR SEQ ID NO: 28:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 1295 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: INGOLIA, DIANE E.
REGISTRATION NUMBER: 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 149; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Rel-
CURRENT APPLICATION DATA:
                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                  SAN FRANCISCO
                                                                              TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                 CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         est Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                        94104
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                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
       APPLICANT:
                                       APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Duery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Copied from 10910186 on 05-05-2004
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64 S-----KIEVILKNAIVYNSMYENESTSFWIRIPKYFNSISLNNESTIINCMENNSGWKV 118
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                189 DTIKVKELTGINFSKTITFBINKIPDTGLITSDSDNINMWIRDFYIFAKELDGKDINILF 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  179 DOKPISNIGNIHASNNIMFKLDGCRDT-----HRINGENFULFDKELNEKEINDLY 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               249 NSLQYTUVVKDYMGNDLRYNKEYYMVNIDYLNRYMYANS------RQIVFNIR- 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              296 RNNNDFNEGYKIIIKRIRGNTNDTRVRGGDILYFDMTINHKAYNLFHKNETMYADNHSTE 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          291 YLNSSLYRGTKFIIKKYASGNKDNIVRNNDRVYINVVKNKEYRL-----ATNASQA 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      356 DIYAIGLREGIKDINDNIIFQIQPMNNTYYYASQIFKSNPNGENISGICSIGTYRFRIGG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73 SGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWYSNLP---GYTIIDSVKNNSGWSI 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130 GIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNNAMGNMKIYINGKLI 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   231 DNGSNSGILKDFWGDYLQYDKPYYMLNLYDPNKYYDVNNVGIRGYMYLKGPRGSVMTTNI 290
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16 LKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEEGDVQLNPIFFFD---FKLGS 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 LLSTFTEYIKNIINTSILNLRYESNHLIDLSRYASKINIGSKVNFDPIDKNQIQLFNLES 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2; Length 438;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APELCANT: TRAILEY, BROCE S.
APELCANT: TRAILEY, BROCE S.
APELCANT: PAPELCY, RISHA V.
APELCANT: PAPELCON: NACENDARY V.
APELCANT: STARKDEN OF CAREAN V.
THILE OF INVENTION: WACCINED AND ANTIOXIN POR TEATMENT AND THILE OF INVENTION: PREVENTION OF C. DIFFICILE DESEASE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23.3%; Score 557.5; DB 2
31.4%; Pred. No. 1.3e-37;
1ve 80; Mismatches 180
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                                                                                                                                                                                                                                   APPLICATION WINBER: US 07/429,791
FILING DARF: 31-007-199
ATTORNEY AGENT INFORMATION:
NAME: INGOLIFA DIAME
REGISTRATION NUMBER: 40,027
APPLICATION NUMBER: US 08/161,907
FILENG DATE: 02-DEC-1993
PRIOR APPLICATION DATA:
                                                                                                             APPLICATION NUMBER: US 07/985,321
FILING DATE: 04-DEC-1992
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Patent No. 6290960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 144, Conservative
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US-08-405-496A-23
                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73 SGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWVSNLP---GYTIIDSVKNNSGWSI 129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           130 GIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNNØMGNMKIYINGKLI 188
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          249 HSLQYTNVVKDYWGNDLRYNKBYYMVNIDYLHRYMYANS------RQIVFNTR- 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            231 DNQSNSGILKDFWGDYLQYDKPYYMLALYDPNKYVDVNNVGIRGYMYLKGPRGSVMTTNI 290
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                                                                                                                                                                                                                                                                                                                                                                 Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                            16 IRDIINEYPNNINDSKILSLONRKNTLVDISGYNAEVSEBGDVOLNPIFPFD---FRIGS 72
                                                                                                                                                                                                                                                                                                                                                        80; Mismatches 180; Indels 55;
                                                                                                                                                                                                                                                                             Query Match
23.3%; Score 557.5; DB 1; Length 438;
Beef Local Similarity 31.4%; Pred. No. 13e-27;
McCholes 144; Conservative 80; Mismatches 180; Indels 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: WILLIAMS. JAAMES A.
TITLE OF INVENTION: VACCINE FOR CLOSTRIDIUM BOTULINUM.
TITLE OF INVENTION: NEUROTOMIN
NUMBER OF SEQUENCES: 30
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        416 DWYRHNYLVPTVKOGNYASILESTS----THWGFVPVSE 450
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STREET: 220 MONTGOMERY STREET, SUITE 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JAMBER: US/08/405,496A
16-MAR-1995
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PRIOR APPLICATION DATA.
APPLICATION NUMBER: US (06/329,154
FILING DATE: 25-007-1994
FRICK-APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                          : 438 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
        SEQUENCE CHARACTERISTICS
                                                                                                                                                               ; MOLECULE TYPE: protein
US-08-480-6048-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: SAN FRANCISCO
STATE: CALIFORNIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                              linear
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                                                                                                                              TOPOLOGY:
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Gaps

220 MODLEN & CARROLL, LLF 220 MONTGOMERY STREET, SUITE 2200 UNITED STATES OF AMERICA

COMPUTER READABLE FORM: MEDIUM TYPE: Floppy CITY: SAN FRANCISCO STATE: CALIFORNIA CORRESPONDENCE ADDRESS

ZIP: 94104 COUNTRY:

16 LKDIINEYPNNINDSKILSLQNRKNTLVDFSGYNAEVSEEGDVQLNPIFPFD---FKLGS 72

4 LLSTF7EYIKNIINTSILNLRYESNHLIDLSRYASKINIGSKVNFDPIDKNOIOLFNLES 63

73 SGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWVSNLP---GYTIIDSVKNNSGWSI 129

g ö ð

189 DIIKVKELNGINFSKTIFFEINKIPDFGLITSDSDNINMMIRDFYIFAKELDGKDINILF 248

231 DNQSNSGILKDFWGDYLQYDKPYYMLALYDPNKYVDVNNVGIRGYMYLKGPRGSVWTTNI 290 249 NSLQYTWVWDYMCYMCNDLRYNKEYYWVNIDYLNRYMYANS ------RQIVFNTR - 295

> 유 ð 윰 ö

416 DWYRHNYLVPTVKQGNYASLLESTS----THWGFVPVSE 450

343 GVEKIISALEIPDVGNLSQVVVKKSKNDQGITNKC-KACHQDNNGNDIGFIGFHQF---- 397

398 ----NNIAKLVASNWYNRQIERSSRILGCSWEFIPVDD 431

APPLICANT: TEALLEY, BROCK S.
APPLICANT: TEALLEY, WACKER S.
APPLICANT: TEALLEY S.
APPLICANT: TEALLEY, BROCK S.
APPLICANT: TEALLEY, BROCK S.
APPLICANT, DEPLICATION OF C.
APPLICATION

TOWNER OF SECURINES: 12 CORRESCHOOL OF C. DIFFIC.
CORRESCHORKES, ENDERSS:
DDDRESSE: WEILEN'S C. CRROLL, LLP
STREET: 220 WONTGOMERY STREET, SUITE 2200
CTTT: SAN PRANCISCO
STREET: SAN PRANCISCO
STREET: AN PRANCISCO UNITED STATES OF AMERICA

COMPUTER READBLE FORM:
MEDIUM TYRE: Rioppy disk
COMPUTER: IN PC computible
OPERATIVE STERRE: PC-COMPUTER:
SOFTWARE: Ratestin Release #1.0, Version #1.30 COUNTRY: U

OFFICE PATENTIA NATA:
CURRENT APPLICATION DATA:
APPLICATION NOTHER: US/08/480,604A
FILLSG DATE: 07-001-1995
FILLSG DATE: 424 CLASSIFICATION: 424 PRIOR APPLICATION DATA:

PELLING DATE: US 08/42,711
PELLING DATE: 14 AARP-1995
PRIOR MPRICATION NUMBER: 08/405,496
PRIOR DATE: 04/406
PRIOR APPLICATION NUMBER: 08/829,154
APPLICATION NUMBER: 05/829,154

APPLICATION NUMBER: US 07/429,791 FILING DATE: 31-0CT-1989 ATTORNEY/AGENT INFORMATION: PILING DATE: 02-DEC-1993 PRIOR APPLICATION DATA: APPLICATION NUMBER: US 01 NAME: INGOLIA, DIANE E.

OPHD-01763 40,027 TELECOMMUNICATION INFORMATION:
TELEPRONE: (415) 705-8410
TELEPROXE: (415) 397-8338
INFORMATION FOR SEQ ID NO: 26: REFERENCE/DOCKET NUMBER: : 462 amino acids amino acid SECUENCE CHARACTERISTICS REGISTRATION NUMBER:

MOLECULE TYPE: protein

linear

TOPOLOGY:

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88 S-----KIEVILKNAIVYNSMYENFSTSFWIRIPKYFNSISLNNEYTIINCMENNSGWKV 142
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          249 NSLOYTHVVKDYWGNDLRYNKEYYNVNIDYLNRYMYANS------RQIVFNTR- 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255 DNGSNSGILKDFWGDYLQYDKPYYMLNLYDPNKYVDVNNVGIRGYMYLKGPRGSVMTNI 314
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Matches 144; Conservative 80; Mismitches 180; Indels 55; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                73 SGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWYSNLP---GYTIIDSVKNNSGWSI 129
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                                                                                                                                                                                                                                                         16 LKDIINEYFNNINDSKILSLQNRKNTLVD7SGYNAEVSEEGDVQLNPIFFFD---FKLGS 72
                                                                                                                                                                                                                                                                                                                                         28 LLSTF7EYIKNIINTSIINLERESNHLIDLSRYASKINIGSKVNFDFIDKNOIOLFNLES 87
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TYTLE OF INVENTION: VACCINE FOR CLOSTRIDIUM BOTULINUM
TYTLE OF INVENTION: NEUROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TIPE: Rippy disk
COMPUTER: IBM PC compatible
OPERATING STETEM: PC-DOS/MS-DOS
SOFTWARR: Petertin Release #1.0, Version #1.30
ONERRY APPLICATION DAYA:
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STREET: 220 MONTGOMERY STREET, SUITE 2200
CITY: SAN FRANCISCO
STRIE: CALIFORNIA
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FILING DATE: 16-MAR-1995
CLASSIFICATION: 424
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10 - 10 - 40 - 44 PARA - 15

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PAPPLICATION NUMBER: US 07/985,321
FILING DATE: 04-DEC-1992
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FILING DATE: 25-OCT-1994
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FILING DATE: 02-DEC-1993
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CLASSIFICATION: 424
PRIOR APPLICATION DATA:
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JS-08-480-604A-26
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73 SGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWVSNLP---GYTLIDSVKNNSGWSI 129
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ouery Match 23.3% Score 557.5; DB 2; Length 462; Sets Local Similarity 31.4% Pred No. 1.46-37; Indexs 55; Gaps Matches 144; Conservative 80; Mismatches 180; Indexs 55; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16 LKDIINEYFNNINDSKILSLONRKNILVDTSGYNAEVSEEGDVOLNPIFPFD---FKLGS 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28 LLSTFTEYIKNIINTSILMLRYESNHLIDLSRYASKINIGSKVNFDPIDKNOIQLFNLES 87
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Patent No. 503060
(APPLICATION TRAK. COMB. APPLICATION TRAK. COMB. APPLICATION TRAK. COMB. APPLICAM: MECH. S. APPLICAM: PROFES, APPLICAM: SECO. S. APPLICAM: SECO. S. APPLICAM: SECO. S. APPLICAM: SERVING S.
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220 MONTGOMERY STREET, SUITE 2200
                                                                                                                                                                                                                                                                                                                             OPHD-01308
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/429,791
FILING DATE: 31-007-1989
ATTORNEY/AGENT INFORMATION:
NAME: INFOLATOR:
NAME: INFOLATION
REGISTRATION NUMBER: 40,027
                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: OFF
TELEROMAGNICATION INFORMATION:
TELEROMS: (415) 795-8410
TELEROMS: (415) 397-8338
INFORMATION FOR SEQ ID NO: 26:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               462 amino acids
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LENGTH: 462 amino aci
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STATE: CALIFORNIA
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Best Local Similarity
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UNITED STATES OF AMERICA

FILING DATE

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1011 LNNAKIYINGKLESHTDIKDIREVIANGELIFKLD------GDIDRTGFEWAKYFSI 1061
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 117 IIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNNM-175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       176 MGNMKIYINGKLIDTIKVKELTGINFSKTITFRINKIPDTGLITSDSDNIN-MPIRDFYI 234
367 GVEKILSALEIDDVGNLSQVVVMKSKNDOGITNKC-KMNLQDNNGNDIGFIGFFGF---- 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels 37; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 IPPNIFSYTNNSLLKDIINEYFNNINDSKILSLONRKNTLVDTSGYNAEVSEBGDVQLNP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4; Length 1169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSEE: STERNE, KESSLER, GOLDSTEIN, & POX P.L.L.C.
1100 NEW YORK AVENUE, NW. SUITE 600
WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15. Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
Patentin Release #1.0, Version #1.30 (RPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query March 22.6%; Score 539.5; DB 4; Best Local Similarity 37.4%; Pred. No. 1.5e-35; Macchae 130; Conservative 64; Mismatchee 11?;
                                                                                                      416 DWYRHNYLVPTVKQGNYASLLESTS----THWGFVPVSE 450
                                                                                                                                                                             422 ----NNIAKLVASNWYNRQIERSSRTLGCSWEFIPVDD 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Recombinant Toxin Fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1581.0130002
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FILMS DARE: 22 AUG.1997
PRIOR RPPLICATION DATA:
APPLICATION UNBER: US 08/782,893
FILMS DATE: 27-DEC-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MBER: US/09/255,829
23-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clifford Charles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Shome, Clifford Charles
APPLICANT: Outen, Connad Fadfalg
APPLICANT: Foreter, Keith Alan
THILE OF INVENTION: Recombinant T
KUMER OF SDUENCES: 29
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                           Sequence 20, Application US/09255829
Patent No. 6461617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: ESMOND, ROBERT W.
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 20:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 27-DEC-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEGUENCE CHARACTERISTICS:
LENGTH: 1169 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: USA
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TLING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-255-829-20
                                                                                                                                                                                                                                                                                                                                   US-09-255-829-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88 S----KIRVILKNALVYNSKYENPSISFAIRIPKYPNSISLNNBYTIINOXENNSGARV 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     189 DTIKVKELJGINFSKTITFEINKIPDJGLITSDSDNINWHIRDFYIFAKELDGKDINILF 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203 DOKPISNIGNIAASNNIMPKLDGCRDI------HRYIWIKYPNLFDKELNEKEINDLY 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       296 RUNNDFNEGYKILIKRIRGNINDTRVRGGDILYFDWILNNKAYNLFMKNETWYADNHSTE 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               315 YINSSLYRGTKFIIKKYASGNKDNIVRNNDRVYINVVKNKEYRL-----ATNASQA 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      356 DIVAIGLEBOTKDINDNIIFGIQDMNNTYYYASQIFKSNFNGENISGICSIGFYRFRLGG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23.34; Score 557.5; DB 4; Length 462;
31.4%; Pred. No. 1.4e-37;
xtive 80; Mismatches 180; Indels 55; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     130 GIISNFLVFTLKQNZDSEQSINFSYDISNNAPGY-NKWFFVTVTNNMMGNMKIYINGKLI 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 249 NSLOYTHVVKDYKGNDLRYNKEXYMVNIDYLNRYMYANS------ROIVFNER- 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         255 DNOSNSGILKDFWGDYLQYDKPYYMLNLYDPNKYVDVNNVGIRGYMYLKGPRGSVMFTNI 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16 LKDIINEYFNNINDSKILSLONRKNTLVD7SGYNAEVSEBGDVOLNPIPPFD---FKLGS 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28 LLSTFTERIKNIINTSILNLRYSSNHLIDLSRYASKINIGSKVNPDPIDKNOIOLFNLES 87
                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC comparibles
OPERATURE STERK: PC-DOS/MS-DOS
SOFFWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCZ/DOCKZT NUMBER: OPHD-01763
TELECHOMIC NIEOPRATTOM:
TELECHORE: (418) 705-8410
TELECHOR: (418) 705-8138
TELECHOR: (418) 197-8138
SEQUENCE CHRACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATE: US 08/161,907
PRIOR APPLICATION DATE:
PRIME PRIM
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FILING DATE: 31-0CT-1989
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/915,136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 08/405.496
FILING DATE: 16-WAR-1995
PRIOR APPLICATION DATA: US 08/329,154
APPLICATION UNMBER: US 08/329,154
                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/480,604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: INGOLIA, DIANE E.
REGISTRATION NUMBER: 40,027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 08
FILING DATE: 25-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PILING DATE: 04-DEC-1992
PRIOR APPLICATION DATA:
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08-915-135-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
PRIOR APPLICATION DATA:
                                                                       COMPUTER READABLE FORM:
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Best Local Similarity
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TOPOLOGY: LENGTH:

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APPLICANT: WESTON, WOLTHANDON TOTAL FRAGMENT ANTIGEN AND TETANUS TITLE OF INVENTION: VACCINE TITLE OF INVENTION: VACCINE FILE REFERENCE: 216-380P
                                                                                                                 OB HIBOYGINEYSIISSMKKHSLSIGSGWSVSLKGNNLIWTIKDSAGEVROITER-DLPDKP 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 POY--NKWEFVIVINNAMONNKIYINGKLIDJIKVKELIGINFSKTITFEINKIPDIGLI 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      667 NAYLANKWVPITITNDRLSSANLYINGVLMGSAEIIGLGAIREDNNITLKLDR----- 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       219 ISDSDNINWAIRDFYIFAKELDGKDINILFNSLQYTAVVKDYMGNDLRYNKEYYMVNI-- 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -CHNNNQYVSIDKFRIFCKALNPKEIEKLYTSYLSITFLEDFWGNPLRYDTEYLIPVAS 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  679 SSKDVOLKNITDYMYLTNAPSYTNGKLNIYYRRLYN----GLKFIIKRYTPNNEIDSFV 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             322 RGGDILYEDMTINNKAY-----NLFMKNETMYADNHSTEDIYAIGLREOFKDINDNI 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34 KSGDFIKLYVSYNNNEHIVGYPKDGNAFNNIDRILRVGYNAPGIPLYKKMEAVK---- 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                788 -----LRDLKTYSVQL--KLYDDKNAS-LGLVGTHNQQIGNDPNRDILIASNWY-FNHL 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               402 IPPSYSKNIDGWYDNBEDIDYI-----LKKSTILNIDINDIISDISGPNSSVITYPDA 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59 GLNPIFPFDFKLGSSGE------DRGKVIVTQNENIVYNSMYESFSISFWIRINK-WVS 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 456 QLVP------GINGKAIHLVNNESSEVIVHKAMDIEYNDMFNNFTVSFWLRVPKVSAS 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111 NLP-----GYTIIDSVKNN-----SGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNA 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               374 IPOIOPMNNTYYRASQIFKSNFNGENISGICSIGTYRFRLGGD------WYRHNYL 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 IPF----NIPSYTNNSLLKDIINEYFNNINDSKILSLONRKHTLVDTSGYNAEVSEEGDV 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match 17.8% Score 425, DB 4; Length 858; Best Local Similarity 26.4%; Precl. No. 26.26; Matches 134; Conservative 90; Mismatches 189; Indels 114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; OTHER INFORMATION: Amino Acids 458 to 1315 of SEQ ID NO: 1 US-08-913-880C-16
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CURRENT FILING DATE: 1997-11-24
NUMBER OF SEQ ID NOS: 17
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Sequence 16, Application US/08913880C
Patent No. 6372225
GENERAL INFORMATION:
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; Sequence 15, Application US/08913880C
; Patent No. 6372225
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LENGTH: 858
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: MINEGED, MOLINIES TO STREAMS TO STREAM AND TEFANUS TITLE OF INVESTION: MACCINE TITLE OF INVESTION: MACCINE THE REPRESENCE: 216-380P
                                                                                                                                  1062 PNTELSOSNIEERYKIOSYSBYLKDFWGNPLMYNKEYYMPNAGNKNSYIKLKKDSPVGBI 1121
                                                        235 FAKELDGKDINILPNSLQYTNVVKDYWGNDLRYNKBYYWVNIDYLNRYMYANS----ROI 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   674 SSKDVQLKNITDYMYLTNAPSYTNGKLNIYYRRLYN-----GLKFIIKRYTPNWEIDSFV 728
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                                                                                                                                                                                                                                                                                    1122 LTRSKYNQNSKYINYRDLYIGEKFIIRR-KSNSQSINDDIVRKEDYIY 1168
                                                                                                                                                                                                           291 VENTRRNNN------DFNEGYKIIIKRIRGNT---NDTRVRGGDILY 328
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; Sequence 17, Application US/08913880C
; Patent No. 6372225
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SEQ ID NO 15 LENGTH: 860

RESULT 12 US-08-913-280C-16

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ARPLICANT: NATSUDA, MOIDLIO
TITLE OF INVENTION: WACCINE
TITLE OF INVENTION: WACCINE
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                                                                                                                                                                                                                                                                                                                                           409 IPPSYSKNIDCWVDNEEDIDVI-----LKKSTILNLDINVDIISDISGFNSSVITYPDA 462
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106 IPPSYSKNLDCWYDNEEDIDVI -----LKKSTILNLDINNDIISDISGFNSSVITYPDA 459
                                                                                          59 QINPIFPFDFKLGSSGE------DRGKVIVTQNENIVYNSMYESFSISFWIRINK-WVS 110
                                                                                                                                                                                              160 QLVP------GINGKALHLVNNESSEVIVHKAMDIEYNDMFNNFTVSFWLRVFKVSAS 511
                                                                                                                                                                                                                                                                                         111 NLP-----GYTIIDSVKNN-----SGWSIGIISNFLVFTLKONEDSEQSINFSYDISNNA 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161 PGY --- NKWPPVTVTNNAMASNMKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLI 218
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  219 TSDSDNINMMIRDFYIFAKELDGKDINILFNSLQYTWVYKDYWGNDLRYNKEYYWVNI-- 276
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----DYL---NRYMYANSRQIVFNTRRNNDFNECYKIIIKRIRGNIN-DTRV
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26.4%; Pred. No. 2e-26;
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CURRENT APPLICATION NUMBER: US/08/913,880C
CURRENT FILING DATE: 1997-11-24
WUMBER OF SEQ ID NOS: 17
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Patent No. 6372225
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WHORREN OF SED IN NOS: 197-11-24
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             458 OLVP-----GINGRAIHLVNNBSSEVIVHKAMDIEYNDMFNNFIVSFWIRVPRVSAS 509
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           510 HLEQYGTHEYSIISSMKKHSLSIGSGWSVSLKGNNLIWILKDSAGEVRQIIFR-DLPDKF 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                569 NAYLANKWVFITITNDRLSSANLYINGVLMGSAEITGLGAIREDNNITLKLDR----- 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          219 TSDSDNINKWIRDFYIFAKELDGKDINILFNSLQYTWVKDYWGNDLRYNKEYYMVII-- 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               277 -------DYL---NRYMYANSRQIVPNTRRNNNDFNEGYKIIIKRIRGNTN-DTRV 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              322 RGGDILYFDWIINNKAY-----NLFMKNEIMYADNHSTEDIYAIGLREOTKDINDNI 373
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 134; Conservative 90; Mismatches 169; Indels 114; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                   90; Mismatches 169; Indels 114; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 IPF----NIFSYTNNSLLKDIINEYPNNINDSKILSLONRKNTLVDTSGYNAVSEBGDV 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161 PGY - - NKWPFVTVTNNMAGNMKIYINGKLIDTIKVKELTGINPSKTITFEINKIPDTGLI
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26.4%; Pred. No. 2e-26;
                                                                                                                                                                                                                                                                                         Juery Match
17.8%; Score 425; DB 4; Length 860;
Sest Local Similarity 26.4%; Pred. No. 2e-26;
                                                                                                                                  ; OTHER INFORMATION: Amino Acids 456 to 1315 of SEQ ID NO: 1 US-08-913-8802-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: Anino Acids 454 to 1315 of SEG ID NO: 1
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Walter Commission of the Commis
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                                                            ORGANISM: Clostridium tetani
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21;

US-08-913-880C-14 SEQ ID NO 14 TYPE: PRT

FEATURE:

Query Match

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574 NAYLANKWVFITITHDRLSSANLYINGVLMGSASITGLGAIREDNNITLKIDR----- 626
                                                                              219 7SDSDNINMWIRDFYIFAKELDGKDINILFNSLQYTWVVKDYWGNDLRYNKEYYMVNI-- 276
                                                                                                                                                  627 -CNNNNOYVSIDKFRIFCKALNPKEIEKLYTSYLSITFLADFWGNPLRYDTEYYLIPVAS 685
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⁶⁸⁶ SSKDVQLKNIIDYMYLINAPSYINGKLNIYYRRLYN-----GLKFIIKRYTPNNEIDSFV 740 322 RGGDILYFDWTINNKAY-----NLFMKNETMYADNHSTEDIYAIGLREQTKDINDNI 373 741 KSGDFIKLYVSYNNNEHIVGYPKDGNAFNNLDRILHVGYNAPGIPLYKKMEAVK----- 794 374 IFOIOPHNNTYYASOIFKSNFNGENISGICSIGTYRFRLGGD------WYRHNYL 423

^{795 ------}LRDLKIYSVQL--KLYDDKNAS-LGLVGTHNGQIGNDPNRDILIASNWY-FNHL 844

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Sequence 1. Appl.

Sequence 2. Appl.

Sequence 3. Appl.

Sequence 4. Appl.

Sequence 5. A
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Sequence 10932,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                023 LNNSKITINGRLIDGKPISNLGNIHASNNIMFKLDGCRDI------HRYIWIKYFNLF 1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MGNAKIVINGKLIDINVKELTGINFSKTITFEINKIPDTGLITEDSDNINGMIRDFYIF 235
    Sequence 12143
Sequence 2, Ap
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      908 IDKNQIQLPNLESS-----KIEVILKNALVYNSWYENFSISFWIRIPKYFNSISLNNRYT 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              117 IIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNNM 175
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24.5%; Score 586.5; DB 10; Length 1295;
Best Local Similarity 31.6%; Pref. No. 4:e-37;
Matchos 149; Conservative 82; Missatches 186; Indels 55;
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Patent No. US20020137886Al
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US-09-726-949A-1
    RESULT 1
US-09-726-949A-1
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Sequence 1, App 1
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Sequence 9, App 1
Sequence 9, App 1
Sequence 1, App 1
Sequence 13, App 1
Sequence 23, App 1
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341.491 Million cell updates/sec
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                       GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd.
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Perfect score:
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Query Match 22.8%; Score 544.5; DB 10; Length 425; Best Local Similarity 31.4%; Pred. No. 1.8e-34; Indels 55; Gaps Matches 141; Conserveive 80; Mismatches 173; Indels 55; Gaps
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                                                                    69 KLGSSGEDRGKVIVTQNENIVYNSMYESFSISPWIRINKWVS--NLPG-YTIIDSVK-NN 124
                                                                                                                  61 GIYSS--KPSEVNIAQNNDIIYNGRYQNFSISFWVRIPKYFNKVNLNNEYTIIDCIRNNN 118
                                                                                                                                                                                                              125 SGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWPFVTVINNAMGNMKIYI 183
                                                                                                                                                                                                                                                                                   119 SGWKISLNYNKIIWTLQDTAGNNQKLVFNYTQMISISDYINKWIFVTITNNRLGNSRIYI 178
                                                                                                                                                                                                                                                                                                                                                        184 NGKLIDTIKVKELDGINFSKTITFEINKIPDTGLITSDSDNINKWIRDFYIFAKELDGKD 243
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297 --NNNDFNEGFKIIIKRIRGNFN----DTRVRGGDILFFDWTINNRAYNLFWKNETWIAD 350
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1 SYTNDKILLINFUKLYKKIKDNSILDMRYENNKFIDISGIGSNISINGDVYIYSTNRNOF 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        404 CSIGTYRPR----LGGDWYRHNYLVPTVKQGNYASLLESTSTHWGFV 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             388 -- IGLLGFHSNNLVASSWYYNNIRKNTSSNGCF-----WSFI 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: George Sachs
TITLE OF INVENTION: Method and Compositions for the
TITLE OF INVENTION: Treatment of Pancreatitis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILE REFERENCE: 17282
CURRENT APPLICATION NUMBER: US/09/2288.326
CURRENT FILING DATE: 1599-04-08
NUMBER OF SEQ. ID NOS: 11
SOFTWARE: FREESED for Windows Version 3:0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-288-326-9
; Sequence 9, Application US/09288326
; Patent No. US20010018049A1
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                                                                                                                                                                                       1135 IKGPRGSVMTTNIXINSSLYRGIKKTIKKTASGNKDNIVRNNDRVXINVVVKHKEYRL-- 1192
                                                                    1075 DRELNEKEIKDLYDNOSNSGILKDFWGDYLOYDKPYYMLNLYDPNKYYDVNNVGIRGYMY 1134
                                                                                                                                                                                                                                                                                                                                                        1193 -----ATNASQAGVEKILSALEIPDVGNLSQVVVMKSKNDQGITNKC-KMNLQDNNGND 1245
236 AKELDGKDINILFNSLQYTNVVKDYWGNDLRYNKEYYWVNIDYLNRYKKANS----- 287
                                                                                                                                         288 ----RQIVFNTR-RNHNDFNEGYKIIIKRIRGNTNDTRVRGGDILYFDWTINNKAYNLFW 342
                                                                                                                                                                                                                                                                                           343 KNETWYADNHSTEDIYAIGLREQTKDINDNIIFQIQPMNNTYYYASQIFKSNPNGENISG 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22.8%; Score 546; DB 8; Length 431;
1larity 31.5%; Pard. No. 1.4e-34; Conservative 80; Mismatches 166; Indels 74; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 SYTHNSILKDIINEYFHNINDSKILSLQNRKHTVDFSGYNAEVSEEGDVQLNPIFFFDF 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1246 IGPIGFHOP-----NNIAKLVASNATNBOIERSSRILGCSWEFIPVDD 1288
                                                                                                                                                                                                                                                                                                                                                                                                                             403 ICSIGTYRFRIGGDWYRHNYLVPTVKQGNYASLIESTS----THWGFVPVSE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT ELEMENT RANGES WICHER I.
APPLICANT WEADTHING, MIGHET L.
APPLICANT WITHOUT MIGHT P.
APPLICANT PRESCHAIR ROLLER A.
APPLICANT PRESCHAIR A.
APPLICANT TITLE OF INVENTIONS TYPE E SUTULINUM TOXIN AND USE THERBOO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ISBE: MIXON & WANDERHYE P.C.
1: 1100 No. US20020081304A1th Glebe Rd. 8th floor
Ariington
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JMBER: US/08/981,087A
27-MAY-1998
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APPLICATION HUMBE: PCT/GB96/01409
FILING DATE: 12-JUN-1996
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THE CONTRACTOR OF THE CONTRACT
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FILING DATE: 12-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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TELECOMMUNICATION INFORMATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEC ID NO: 1:
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MOLECULE TYPE: peptide
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Natches 147; Conserv
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125 SGWSIGIISNFLVFTLKQNEDSEQSI 150

g ð 119 SGWKISLNYNKIIWTLQDTAGNNOKL 144

Sequence 3, Application US/08981087A Patent No. US20020081304A1 GENERAL INFORMATION:

RESULT 5 US-08-981-087A-3

APPLICARY: TRUCKING MICHAEL J.
APPLICARY: MANDHILO, MARGHER L.
APPLICARY: MANDHILO, MARGHER L.
APPLICARY: MANDHILO, MARGHER L.
APPLICARY: TRIBBILLY, MANDHILO, MANDHIL

:: NIXON & VANDERHYE P.C. 1100 No. US20020081304A1th Glebe Rd.

CORRESPONDENCE ADDRESS

Arlington

STREET: STATE:

Š ADDRESSEE:

USA

COUNTRY:

Patentin Release #1.0, Version #1.30

SOFTWARE: Patentin Rel-CURRENT APPLICATION DATA:

ZIP: Z2201-4741
COMPUTER READABLE FORM:
WEDLUM TYPE: F1DAPPY 0418k
COMPUTER: INS PR COMPATIBLE
OPERATING SYSTEM: PC-DOS/NS-DOS

UMBER: US/08/981,087A 27-MAY-1998

APPLICATION NUMBER: FILING DATE: 27-MAY

CLASSIFICATION:

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228 DPWGDYLOYDKPYYMLNLYDPNKYYDVNNYGIRGYMYLKGPRGSVMTTNIYLNSSLYRGT 287
                                                                                                                                     306 KIIIKRIRGNINDIRVRGGDILYFDWIINNKAYNLFWKNEINYADNHSTEDIYAIGLRED 365
                                                                                                                                                                                                                                                288 KFIIKKIASGNKDNIVRNDRVXINVVVKNKEXRL-----AINASOAGVEKIISALE 339
                                                                                                                                                                                                                                                                                                                                                                        366 TKDINDNIIFQIQPMNNTYYASQIFKSNFNGENISGICSIGTYRFRIGGDWYRHNYLVP 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             340 IPDVGNLSQVVVMKSKNDQGITNKC-KMNLQDNNGNDIGFIGFHQF------NNIAK 389
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APPLICANT: MAUDILING, MEGRAT, M.
APPLICANT, M.
APPL
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CURRAT APLICATION DARA: 05/08/981,087A
FILING DATE: 7-MAY-1998
GLASSIFICATION: 424
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ADDRESSE: NIXON & VANDERHYE P.C.
STREET: 1100 No. US20020081304A1th Glebe Rd.
CITT: ArlAngton
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APPLICATION NUMBER: PCT/GB96/U1409
FILING DATE: 12-JUN-1996
PRIOR APPLICATION DATA:
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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REPERENCE/POCKET NUMBER: 128
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-816-4000
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PCT/GB96/01409
                                                                          GB 9511909.5
                                                                                                                                                         25,327
                                                                                                                                                     REGISTRATION NUMBER: 25,327
REFERENCE/POCKET NUMBER: 12
TELECOMMUNICATION INFORMATION
TELEPHONE: 703-816-4000
                APPLICATION NUMBER: PCT/G
FILING DATE: 12-JUN-1996
PRIOR APPLICATION DATA:
                                                                                                                                        Crawford, Arthur R
                                                                                               FILING DATE: 12-JUN-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                         CHARACTERISTICS:
: 144 amino acids
                                                                                                                                                                                                                                                        INFORMATION FOR SEC ID NO:
                                                                                                                                                                                                                                   703-816-4100
                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: peptide
PRIOR APPLICATION DATA:
                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
TOPOLOGY: 11
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                                                                                                                                                                                                                                                                                             LENGTH:
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152 FSYDISNNAPGY-NKWFPVTVTNNABGNMKIYINGKLIDTIKVKELTGINFSKTITFEIN 210 Query Match

10.04; Score 239; DB 8; Length 144;
Best Local Similarity 37.04; Pred. No. -1.E-12; Indels 10;
Matches 54; Conservative 25; Manatches 57; Indels 10; ô

- 11 KIPDIGLITSDSDNIRMIRDFYIFAKELDSKDINILFNSLQYTNVVKDYWGNDLRYNKE 270 62 GCNDTRYV-----GIRYFKVFDTELGKTEIETLYSDEPDPSILKDFWGNYLLYNKR 112 2 FNYTOMISISDYINKWIFVTITNNRLGNSRIYINGNLIDEKSISNLGDIHVSDNILFKIV 61 ò
 - 271 YYMVNIDYLNRYMYANSRQIVENTRR 296

1 SYTNDKILLLYFNKLYKKIKDNSILDMRYENNKFIDISGYGSNISINGDVIIYSTNRNOF 60

9 SYTHNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEEGDVQLNPIFPFDF 68

10.5%; Score 250; DB 8; Length 144; 37.7%; Pred. No. 1.36-12; Live 30; Mismatches 55; Indels

Query Match
10.5%; Score 250; DB
Best Local Similarity 37.7%; Pred. No. 1.3e
Best Ches 55; Conservative 30; Mismatches

: 144 amino acids amino acid SEQUENCE CHARACTERISTICS:

TOPOLOGY: linear MOLECULE TYPE: peptide

STRANDEDNESS: US-08-981-087A-2 Gaps

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54 E-----EGDVQLNPIPPFDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINK 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              202 DYLSGLIBGDGYIGP------GDITITHHANDVLNTIFINKRIKNSILVEK 246
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      247 W-------KDILKDNPYFVNAFSINIKTNLAKEKIFTNIYNKLYSDYKIN---QINNH 294
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                412 HDNKOPNYI --KFRFNYFIKSYNWN----NRVFGLVLSEYINNIKIDNYDFYFYNKYINH 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6.0%; Score 142.5; DB 10; Length 476;
22.2%; Pred. No. 0.0099;
Live SB; Mismarches 105; Indels 121; Gaps
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Patent No. 1820020102231A1
GRERAL INPORMATION:
APALTANE: The Institute of Physical and Chemical Research
TITLS OF INVESTION: InfoOmotases
FILD REPRESACE: PH-651.
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                                                                                                                                                                                                                             CURRANT APPLICATION WOMBER: US/09/774,414
CURRANT FILING DATE: 2001-01-31
BRICK APPLICATION WOMBER: 09/306,970
BRICK FILING DATE: 1999-05-07
NUMBER OF SEQ ID NOS: 38
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Patent No. US20020661563A1
GENERAL INFORMATION:
APPLICANT: Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILLIG DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ONGANISM: Saccharomyces cerevisiae
US-09-774-414-3
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APPLICANT: Trawick, John D.
APPLICANT: Trawick, John D.
APPLICANT: Yamamoto, Robert T.
APPLICANT: Xu, H. Boward
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APPLICANT: Zyskind, Judith W.
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Matches 81; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         285 AN-SRQIVFNTRRNNN-------DFNEGYKIIIKRIRGNTNDTRVRGGDILY 328
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          113 YYLLNLIRIDKSITQNSNFLNINQQR 138
                                                                                                                                                              US-09-895-913A-12
US-09-895-913A-12
; Sequence 12, Application US/09895913A
; Patent No. US/05/216458A1
; GENERAL INFORMATION:
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RESULT 7 US-09-774-414-3

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FILE REPERENCE:
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17.6%; Pred. No. 0.011;
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APPLICANT: Tamanoto, Robert T.
APPLICANT: Nu. H. Howard
APPLICANT: Nu. H. Howard
ITTLE OF INVENTION: Identification of Essential Genes in
TITLE OF INVENTION: Prokaryotes
PRIOR PLIAND ANNE, 1000 CA12,576
PRIOR PRICATION NAMES: 60,212,576
PRIOR PRICATION NAMES: 60,212,576
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Patent No. US20020061569A1
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-09-815-242-5578
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APPLICANT: Ohlsen, Kari L.
PSPLICANT: Syskud, Judith W.
APPLICANT: Wall, Daniel
APPLICANT: Travick, John D.
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119 ----NKTATVDLLNGQSSSDKQYIIQQVAYPDNSSTDNGKIDYTLBTQNGKSSWSNSYSN 474
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 932;
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Pred. No. 0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR PATICATION NAMES (02/21/27):
PRIOR PATICATION
CURRENT APPLICATION NUMBER: US/09/815,242
CURRENT FILMS DATE: 201-03-21
PRIOR APPLICATION NUMBER: 60/191,078
PRIOR FILING DATE: 2000-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , Sequence 5779, Application US/09815242

; Patern No. 02700506156941

; GEREAL INFORMATION :

APPLICANT : Heableck, Sobert

APPLICANT : Ohlsen, Kall L.
                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: 60/206,848
PRIOR FILING DATE: 2000-05-23
PRIOR APPLICATION NUMBER: 60/207,727
PRIOR FILING DATE: 2000-05-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . ORGANISM: Staphylococcus aureus
US-09-815-242-12438
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Best Local Similarity 17.6%;
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                   AMPLIONNY TRACES, GAD D.

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WRITCHNY GENERAL TRACES, GAD TO THE TRACES OF THE TR
Zyskind, Judith W
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197 IGINFSKTITFEINKIPDIGLITSDS-----DAINAMIRDFYIFAKELDGKDIN---- 245
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AppLICANT: Xu. H. Howard
TILLE OF INVENTION: Telentification of Essential Genes in
TITLE OF INVENTION: Prokaryotes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHORRER PRINCE AND THE STATE A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/09/815,242
18-69-615-242-12751. Application US/09615242 Sequence 12751. Application US/09615242 Patent No. US20000061559A1 GENERAL INFORMATION: PAPLICANN: Haselbeck, Robert APPLICANN: Oblisen, Kari L. APPLICANN: Oblisen, Kari L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; URGANISM: Staphylococcus aureus
US-09-815-242-12751
                                                                                                                                                                                                                                                         f. Sysking, Judith W.
T. Sysking, Judith W.
T. Wall, Daniel
F. Trawick, John D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Carr, Grant J.
Yamamoto, Robert T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ILE REFERENCE: ELITRA.011A
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1241 SGNMAVNRFANDKNGDMYYLN--SDGIALVGVQTINGKTYYFGQDGKQIKGKIITDNGKL 1298
                                                                                                                                                                                                                      1299 KYPLANSGELARNIFATDSQNBWYYPGSDGVAVTGSQTIAGKKLYFASDGRQVKGSFVTY 1358
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---- QTKDINDN--- 372
                                                                                                                                                                  373 -----IIPQIQPMNTYYASQ------IPKSN-----P 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          254 NNSELLEKLTEIKAMIQDYTDRNIGEGNNSILALENKMSQIVKANAYLRVDLYDHAELKL 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54 ---EEGDVQ--LNPIFFFDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKW 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314 AQHTKSSLQNILKVLSSF----SSAVNSQKEIKNYHEKFIARYGYEQL-VPLQLLLNS- 366
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      591 GSLDSYNHVPAIIYKDIIKRETWNIRKSEAKTLDSLKNWLTNNVPPFVRMKYIDQIIY 650
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match

5.1%; Score 121.5; DB 12; Length 990;
Best Local Similarity 21.9%; Pred. Mc. 0.087;
Matches 107; Conservative 86; Mainatches 170; Indels 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION MOTACIN I BIOSYNTHESIS GENES AND PROTEINS FILE REFERENCE: UAR-17403/22
        333 INNKAYNLFM--KNETMYADNHSTEDIYAIGLRE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT REPLICATION WURBER: US/10/047.676A CURRENT ELINO DATE: 2002-03-21 PRIOR PRIOR PRIOR LINGUISTICS 2002-07-28 PRIOR REPLICATION NOMBRE: US 09/627/376 PRIOR REPLICATION DATE: 2000-07-28 PRIOR ED NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                          1359 NGKVHYYHADSGELQVNRPEADKDGNWY 1386
                                                                                                                                                                                                                                                                                                                             396 NGE----NISGICSIGTYRFRLGGDWY 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7, Application US/10047676A
Patent No. US20020123105A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Streptococcus mutans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         eld, Page W.
Ping W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Qi, Fengxia
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APPLICANT: Chen, Pinc
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-047-676A-7
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        300 -DFNEG-YKIIIKRIRGNI-----NDTRVRGGDILYFDWIINN----KAYNLFMKNE 345
                                                           660 DNLDSGKYKVIPEKPAGLTQTVINITEDDKDADGGBV---DVIITDHDDFTLDNGYFEED 716
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Septent No. US202031826A1
GENERAL INFORMATION:
APPLICANT: Nichols, Scott E.
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9-09-740-274-6
                                                                                                                                                                  346 TMYADNHSTED 356
                                                                                                                                                                                                                                               717 ISDSDSDSDSD 727
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FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                               RESULT 12
US-09-740-274-6
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297

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117 IIDSVKNNSGWSIGIISNFLVPTLKQ----NEDSEQSINPSYDISNNAPGYNKWFFV--T 170
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                                                                193 VKBLTGINFSKTITFEINKIPDT----GLITSDSDNINM---WIRDFYIFAKE----- 238
                                                                                                                                             349 ISYLKGDNLA-TIYNTLQKIPDSKGFQSLVSKSYSYSLNETQYSBPQTTTKBFGHNPFR 307
                                                                                                                                                                                                                                                                                                      239 ----LDGKDINILFNSLQYTNVVKDYMGNDLRYNKBYXMVNIDYLNRYMYANSRQIVPNT 254
                                                                                                                                                                                                                                                                                                                                                                                                                          308 SVGLINSQSNNGAMMGVGVQLGFKQFFGKNKFFGIRYYAF-FDYNHAYIKSN----FFNS 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             295 RRNNNDFNEGYKIIIKRIRGNTNDTR-----VRGGDILYFDMTINNKAYNLFMKNETHYA 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    363 ASNVETYGAGSDILLMFINGGSDKNRKVSFGIFGGIALAGTTWLNSQFMNLKTTNSAYSA 422
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21.3%; Pred. No. 0.16;
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SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 5809
LENGTH: 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/09/815,242
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Patent No. US20020061569A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 60/269,308
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US-09-815-242-5809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ohlsen, Kari L.
Zyskind, Judith W
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Haselbeck, Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wall, Daniel
Trawick, John D.
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Best Local Similarity
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US-09-815-242-5809
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PastSEQ for Windows Version 2.0
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TELECOMUNICATION INPORMATION:
TELEPHONE: 617-428-0200
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SOUTHARE: REASING CO WINGOWS VETS.
COURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/934,666A
FILING DATE: 01.APP-1997
CLASSIFICATION: 424-1997
                                                                                                                                                                                                                                                                                          Sequence 20, Application US/08834666A
Patent No. US20020044949A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Clark & Elbing LLP
176 Federal Street
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NAME: Clark, Paul T.
REGISTRATION NUMBER: 30.175
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IBM Compatible
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LENGTH: 483 amino acid
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MOLECULE TYPE: protein
FRAGMENT TYPE: internal
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CORRESPONDENCE ADDRESS:
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MEDIUM TYPE: Diskett
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OTHER INFORMATION:
834-566A-20
711 IYTLEDSG 718
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STREET: ...
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US-08-834-665A-20
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Sequence (1981, 1982, 19

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US-10-271-012-50
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US-09-910-186A-14
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      US-09-611-419A-10
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(without alignments)
1014.440 Willion cell updates/sec
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                              GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd
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The control of Capert 0.
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Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                          November
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Perfect score:
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Sequence 10, 7 Sequence 24, 7 Sequence 50, M Sequence 50, 2 Sequence 50, 2 Sequence 50, 2

To come, by contact, fraction (Cooking Series)

26. (Cont. Optionate, fraction (Cooking Series)

27. (Cont. Optionate, fraction (Cooking Series)

78. (Cont. Optionate, fraction (Cooking Series)

78. (Cont. Optionate, fraction (Cooking Series)

78. (Cooking Series)

Description	Sequence 10, Appl	Sequence 10, Appl	Sequence 60, Appl	Sequence 60, Appl	Sequence 1, Appl1	Sequence 13524. A
Я	US-09-611-419A-10	US-09-910-186A-10	PCT-US97-15394-60	US-08-704-159-60	US-08-954-302-1	US-09-791-537-13524
90	20	23	-	7	13	21
Query Match Length DB	450	450	1291	1291	1291	1291
Query	100.0	100.0	8.66	8.66	99.6	8.66
Score	2391	2391	2386	2386	2386	2386
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SUMMARIES

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 NPIEPEDEKLGSSGEDRGKVIVTQNENIVYNSKYESFSISFWIRINKWYSNLPGYTIIDS 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OTHER INFORMATION: Synthetic construct based on Clostridium botulinum OTHER INFORMATION: sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Indels
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PALCANT: Ahalley Bruce S.
TITLE OF INVENTION: Multivalent Vaccine For Clostridium
TITLE OF INVENTION: Botulinum Neurotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 2391; DB 23;
100.0%; Pred. No. 2.8e-212;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0, Mismatches
PRIOR PLING DATE: 1999-02-12
PRIOR APPLICATION NUMBER: 08/13,975
PROP RINING DATE: 1993-09-21
NUMBER OF SEQ ID NOS: 34
SOFTAMER: EASLESS for Windows Version 4.0
SEG ID NO 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 NYLVPTVKQGNYASLLESTSTHWGFVPVSE 450
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; GENERAL INFORMATION:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentTn Pair-
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ADDRESSEE: Medien & Carroll
                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Artificial Sequence
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MEDIUM TYPE: Floppy
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STATE: California
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ZIP: 94104
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PCT-US97-15394-60
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                                                                                                                                                                                                                                                                                                              FEATURE: OTHER INFORMATION: Encoded polypeptide of a synthetic construct based
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100.0%; Pred. No. 2.8e-212;
Live 0; Mismatches 0; Indels 0;
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PRODE PRICES PRINCES 2070810/12990
PRODE PRICES PRINCES APPROVED NUMBERS PRICES PRINCE PR
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CURRENT APPLICATION NUMBER: US/09/910.186A
CURRENT FILING DATE: 2001-07-20
NUMBER OF SEC ID NOS: 42
SOFTWARE: FastSEC for Windows Version 4.0
SEC ID NO 10
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PRIOR FILING DATE: 1999-05-12
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PRIOR APPLICATION NUMBER: 60/133,869
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PRIOR APPLICATION NUMBER: 60/133,873
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                                                                                                                                                                                                            TYPE: PRT
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                                                                                                                                                                 EENGIH:
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SOFTWARE: Patentin Release #1.0, Version #1.30
CUGREM: APPLICATION DAYS.
APPLICATION NUMBER: US/08/104,159
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    Jane Massey Licata, Esq
    Main Street

                                                           PC-DOS/MS-DOS
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GENERAL INFORMATION:
         IBM PC compatible
                                                                                                                                                                                                                                                                                                                            ATTORNEZ/AGENT INFORMATION:
NAME: Ingolia, Diane E.
REGISTRATION NUMBER: 40.027
REFERENCE/DOCKET NUMBER: OPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPAX: (415) 397-8338
INFORMATION FOR SEQ ID NO: 60:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 1291 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                   PILING DATE:
CLASSIFICATION: 424
                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino acid
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         COMPUTER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99.8%; Score 2386; DB 1; Length 1291; 100.0%; Pred. No. 3.98-211; tive 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Williams, James A.
APPLICANT: Thilde, Taktue S.
TITLE OF INVENTION: Multivalent Vaccine For Clostridium
TITLE OF INVENTION: Botulinum Neurotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             220 Montgomery Street, Sulte 2200
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TELECOMONICATION INVOMMATION:
TELECOMONICATION INVOMMATION:
TELECOMONICATION INVOMMATION:
TRANSPORTER LEATON NO: GASTON INVOMMATICAL INVOMMATICAL INVOMMATION INVOMENTED NO: GASTON INVOM
APPLICATION NUMBER: PCI/US97/15394
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GENERAL INFORMATION:
                                                                               CLASSIFICATION:
ATTORNEY/AGENT INVORMATION:
NAME: INGOLIA, DIAME E.
REGISTRATION NUMBER: 40,027
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MEDIUM TYPE: Floppy disk
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US-08-704-159-60
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963 KNNSGWSIGIISNPLVPTLKQNBDSBQSINPSYDISNNAPGYNKRPPVTVTNNAMGRWKI 1022
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TITLE OF INVENTION: Composition and Aschods for Systemic Composition and Aschods for Systemic Composition and Aschods and Therapeutic Agents Prince of Inventions Designation Co
                                                                                                                                                                                                                                                                                           843 TIPFNIFSYTNNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEBGDVQLN 902
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                                                                                           Indels 0; Caps
                                                                                                                                                                                                2 TIPFNIFSYTNNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEEGDVQLN 61
Owery Match 99.8%, Score 2386; DB 11; Length 1291; Seef Local Similarity 100.0%; Pred. No. 39-2-11. SMACOher 449; Conservative 0; Mismatches 0; Indels 0; Mitches 449; Conservative 0; Mismatches 0; Indels 0;
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COUNTRY:

IITLE OF INVENTION: METHODS OF USE THEREOF

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APPLICAN: Sidemain. Inc.
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1203 JAROTKOINNIIPOIOPRNWYYYASOIPRSNRGRNISGICSIGTYRFRIGGMYRHM 1262
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                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETTE, 3.5 INCH, 1.44 MD STORAGE
                                                                                                                                                                                                                                                               OPERATING SFSTEM: MINDOMS FOR WORKGROUPS SOFTWARE. WORKGROUPS 5.1 WORKGROUPS APPLICATION WORKS. WAS APPLICATION WORKER US /08/554,302 FILMS AME HE HERSTEL HERSTELL HE SENTENCE OF 5.2 MINDOMS. WAS APPLICABLE TO A 5.2 MINDOMS. WAS A 5.2 MINDOM
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TELECOMONIZATION INPOSABATION:
TELEFRANDE: (609) 779-2400
TELEFRAN: (609) 810-144
INPORMATION FOR SEQ ID NO: 1:
SEQUENCE CHRANCERISTICS:
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NAME: Jane Massey Licata
REGISTRATION NUMBER: 32,257
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APPLICATION NUMBER:
                                                                                                                                                                                                                  IBM 486
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TOPOLOGY: LINEAR
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1023 YINGKLIDTIKUKELTGINESKTITEEINKIPDIGLITESDEDINMAKIRDFYIFAKELDG 1082
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                                                                                                                                                                                                                                                                                 99.8%; Score 2386; DB 21; Length 1291;
100.0%; Pred. No. 3.9e-211;
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                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 100.0%; Pred. No. 3.9
Matches 449; Conservative 0; Mismatches
FILE REFERENCE: 261/210
CURRENT AFPLICATION NUMBER: US/09/791,537
CURRENT FILING DATE: 2001-02-22
NUMBER C SEQ. DD NOS: 153055
SEQ. TO NOS: 153055
SEQ. TO NOS: 15305
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CURRANT FILING NATE: 2001-02.22
WINDRER OF SEQ ID NOS: 153055
SOFTWARE: Patentin version 3.0
SEQ ID NO 95055
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; Sequence 95055, Application US/09791537
                                                                                                                                                                                 TYPE: PRT
CORGANISM: Clostridium botulinum
US-09-791-537-13524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Bionomix, Inc.
APPLICANT: Debe, Derek
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1203 LREGTKDINDHIIPQIQPHNNIYYASQIFKSNFNGENISGICGIGTYRFRLGGDWYRHN 1262
1083 KDINILFNSLQYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYMYANSRQIVFNTRRNNNDF 1142
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                                                              302 NEGYKIIIKRIRGNTWDTRVRGGDILYPDMTINNKAYNLFWKNETWYADNHSTEDIYAIG 361
                                                                                                                                                                                           LREOTKDINDNIIFOIOPMNNTYYYASOIPKSNPNGENISGICSIGTYRFRLGGDWYRHN 421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THILE OF INVENTION: Multivalent Vaccine For Clostridium
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 0PHD-02304
TELECOMMUNICATION INFORMATION:
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FILIND DATE: 15-Oct-2002
CLASSIFICATION: <URKNOWN>
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/704,159
TETING DATE: ORTHONO
ATTORNEY/ASBY INFORMATION:
NAME: INGOLIA, DIAME
RESISTRATION NUMBER: 40,027
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STATE: California
COUNTRY: United States of America
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
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MOLDGULE TYPE: procein
SEQUENCE DESCRIPTION: SEQ ID NO: 60:
US-10-271-012-60
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ADDRESSEE: Medlen & Carroll
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 60, Application US/10271012
GENERAL INFORMATION:
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SEQUENCE CHARACTERISTICS:
LENGTH: 1291 amino ocids
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Best Local Similarity
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                                  62 PIFPFDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWVSNLPGYTIIDSV 121
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2 TIPPNIFSTINSLIKDIINEYFNNINDSKILSLQNRKNILVDTSGYNAEVSEEGDVQLN
                                                                                                                                   62 PIFPFDFKLGSSGEDRGKVIVTQNENIVYMSMYESFSISFWIRINKWVSNLPGYTIIDSV
                                                                                                                                                                                                                                                                                                                                                                                             182 YINGKLIDTIKVKELFGINPSKTITPEINKIPDTGLITSDSDNINMIRDFYIPAKELDG
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10 KELTGINFSKIITFEINKIPDTGLITSDSDNINMMIRDFYIFRKELDGKDINILFNSLQ: 265
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                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Williams, James A. APPLICANT: Williams, James A. APPLICANT: Thilliams, James A. APPLICANT: Thilliams, James A. TITLE OF INVENTION: Milliams Neutocloxin Settlinum Neutocloxin OF NEUTOCONENTS: 92
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OWNITER FIRST COMPACTATE
COMPUTER IN FOR COMPACTATE OWNITER IN FORM COMPACTATE OF COMPACTATE 
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Pred. No. 2.1e-205;
1; Mismatches 0;
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220 Montgomery Street, Suite 2200
OPHD-02304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCI/US97/15394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: San Francisco
STATE: California
COUNTRY: United States of America
                                                                                                                                                                                                                                                                                                             Trus97-15394-62
Sequence 62, Application PC/TUS9715394
GENERAL INFORMATION:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 705-8410
TELEFAX: (415) 397-8338
INFORMATION FOR SEQ ID NO: 62:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 96.9%;
Best Local Similarity 99.8%;
Matches 436; Conservative
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LENGTH: 462 amino acids
TYPE: amino acid
TOPOLOGY: linear
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PCT-US97-15394-62
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963 KNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGYNKWFFVTVTNNMAGNMKI 1022
                                                                                                                                                                       .023 YINGKLIDTIKVKELTGINFSKTITPEINKIPDTGLITSDSDNINMIRDFYIFAKELDG 1082
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                                                                                                    YINGKLIDTIKVKELTGINPSKTITPEINKIPDTGLITSDSDWINMWIRDFYIFAKELDG 241
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100.0%; Pred. No. 3.9e-211;
tive 0; Mismatches 0; Indels 0;
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314 GNTNDTRYRGODILTFDRIINNKAYNLEMKNEINYADHSTEDIYAIGLEGGTEDINDNI 373
316 GNTNDTRYRGODILTFDRIINNKAYNLEMKNEINYADHSSEDIYAIGLEGFKDIRDNI 385
336 GNTNDTRYRGODILTFDRIINNKAYNLEMKNEINYADHSSEDIYAIGLEGFKDIRDNI 385
                                                                                                                                          374 IPQIQPANNTYYYASQIFKSNFNGENISGICSIGTYRFRIGGDAYRHNYLVPTVKQGNYA 433
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Williams, James A. TRALIA, TAALIAY, Bruce S. TILE OF INVENTION: Multivalent Vaccine For Clostridium TILE OF INVENTION: Multivalent Vaccine For Clostridium Borulinum Neurotoxin
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CITY: San Francisco
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99.8%; Pred. No. 2.1e-205;
ive 1; Mismatches 0;
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CLASSITICATION - CIRROSMA-
PRIOR APPLICATION DATE:
APPLICATION UNMERS: US/08/704,159
FILING DATE: -CURROSMA-
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COUNTRY: United States of America
21P: 94104
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SEQUENCE DESCRIPTION: SEQ ID NO: 62:
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TELEPA: (415) 397-8338
INPORMATION FOR SEQ ID NO: 62:
SEQUENCE CHARACTERISTICS:
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GENERAL INFORMATION:
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TYPE: amino acid
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CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                            434 SLLESTSTHWGPVPVSE 450
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       374 IFOIOPMNNTYYASOIFKSNFNGENISGICSIGFYRFRLGGDWYRHNYLVFTVKQGNYA 433
                                                                                    386 IFQIOPHNNTYYAASQIFKSNFNGENISGICSIGTYRFRIGGDWYRHNYLVPTVKOGNYA 445
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MEDIUM TYPE: Flogpy disk
COMPUTER: HP COMPARELLE:
OPERATING SYSTEM: PC-D08/M8E.DG
COMPARE: PATENTER:
PSTEMING SYSTEM: PC-D08/M8E.DG
COMPARE: PATENTER:
PSTEMING PATENTER:
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Local Similarity 99.8%; Pred. No. 2.1e-205;
ss 436; Conservative 1; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 62, Application US/08704159
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Medlen & Carroll
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: (415) 705-8410
TELEFAX: (415) 397-8338
INFORMATION FOR SEQ ID NO: 62:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Ingolia, Diane E.
REGISTRATION NUMBER: 40,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 462 amino acids
                                                                                                                                                         434 SLLESTSTHWGFVPVSE 450
                                                                                                                                                                                                                      446 SLLESISIHWGFVPVSE 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: protein
08-704-159-62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       California
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94104
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O O Sest Local Simil
O Matches 436; G
SILEDIN
Do 26 ALLEDIN
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                                                                                                                                                                                                                                                                                                                                  RESULT 12
US-08-704-159-62
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APPLICATE TRANSMITTED TO THE TRA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .019 YINGKLIDTIKVKELTGINFSKTITPQMIKIPNTGLITSDSDKINMMIRDFYIFAKELDD 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 139 NEGYKIIIKRIRGNTNDTRVRGENVLYFNITIDNKQYSL----GMYKPSRNLGTDLVPL 1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1194 GALDQPROBIRKYGSFIIQPCNTEDIYASQLFLSSNATINRLGILSIGSYSFKLGDDYWF 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 GLREQTKD-INDNIIFQIQPMNNTYTYASQIFKSNFNGENISGICSIGTYRFRIGGD-WY 418
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            182 YINGKLIDTIKVKELIGINFSKTITFEINKIPDIGLITSDSDNINMMIRDFYIFAKELDG 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    242 KDINILPNSLQYTNVVKDYWGNDLRYNKEYYWVNIDYLNRYMYANSRGIVFNTRRNNDF 301
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62 PIPPPDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWVSNLPGYTIIDSV 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              999 PIFPFDFKLGSSGDDRGKIIVTQNENIVYNAMYESFSISFWIRINKWVSNLPGYTIIDSV 958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 TIPFNIFSYTNNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEBSDVQLM 61
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16.28; Score 1823; DB 21; Length:
Best Local Similarity 77.37; Pred No. 6.1-59; Indeia
Moniss 351; Conservative 37; Mismatches 56; Indeia
                                                   1254 NHEYLIPVIKIEHYASLLESTSTEWFVFVPASE 1285
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419 RHNYLVPTVKQGNYASLLESTSTHWGFVPVSE 450
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; ORGANISM: Clostridium botulinum phage d
US-09-791-537-16595
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19-09-791-537-16595

Sequence 16595, Application US/09791537

GENERAL INFORMATION:
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          194 KELTGINFSKTITFEINKIPDTGLITSDSDNINMWIRDFYIFAKELDGKDINILFNSLOY 253
                                                                                           306 KBLTGINFSKTITFEINKIPPTGLITSDSONINHWIRDFYIFAKELDGKDINILFNSLOY 265
                                                                                                                                                                                                                                                                                                                                                                                          314 GHTHDTRYRGGDILYFDMTINNKAYNLFMKNETMYADNHSTEDIYAIGLREQTKDINDNI 373
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IFQIQPMNNTYYASQIFKSNFNGENISGICSIGTYRFRLGGDWYRHNYLVPTVKQGNYA 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IFOIOPMANTYYYASOIPKSNPNGBNISGICSIGTYRPRIGGDWYRHNYLVPTVKOGNYA 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          839 TIPPNIFSTINNSLLKDMINETFNSINDSKILSLQNKKNTLMDTSGYNAEVRVEGNVQLN 898
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SLLESTSTHWGFVPVSE 450
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            270 EYYMVIDYLNRYMYAN---SRQIVENTRRNNNDFNEGYKIIIKRIRGNTNDTRVRGGDI 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            374 VPPDQMPPTASLKGHNPNIYTLLQCI -- EYKG -- REYELLVRKIQKNTLKNKKVYTSKEE 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52 VSEEGDVQLNPIFPFFFFKLGSSGEDRGKVIVTQNENIVY----NSMYESFSISFWIRINK 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          130 IROYGVV-----NELIDKYNNLYYKHRPNREIHSFGDKYYLYENE 470
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     471 QSI----MSIIKSIKLLSNESVEGYSNSVEFWINNEYTGLDCKEKKELLERMFSNSKISM 526
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sediance sed
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                  , ORGANISM: Staphylococcus epidermidis
US-10-092-411A-2993
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                                    GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd
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CORRESP PARLICATION WINDER: 267,07035,411A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119 DSVKNNSGWSIGIISN-----FLVFTLKQNEDSEQSINFSYDISNNAPGYNKWFFV 169
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     377 DKYENIKAHLKIJSYIDKSKVPNNTKLDVEYKTALSSVN--KTITVEYQKPNENRTANL 434
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63; Mismatches 184; Indels 121;
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Local Similarity 21.0%; Pred, No. 0.39;
ees 98; Conservative 63; Conservative
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PRIOR FILMS DATE 1998-09-13-97-14-001
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                                                                                                                                                                                                         Sequence 5314, Application US/10092411A GENERAL INFORMATION:
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GENERAL INFORMATION:
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US-10-092-411A-5314
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    106 NNAINIOSRLKYKPOVONEPLKWSNANYSOIK--NAMDIKRLANDSSLKY-----0 1154
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174 NROGNMKIYINGKLIDTIKVKELFGINF -----SK7ITFEINKIPDTGLIT 219
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                                                                                                    327 LYPDMIINNKAYNLFRKNEINYADNHSI------EDIYAIGLRE-364
                                                                                                                                                                                                                    662 LYPWKSVREKKSNL---NEIINMNKYSTRIDESIPNEFNKDEIILCLNYDGIYGINNINR 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ch 5.1%; Score 121.5; DB 6; Length 1335; Pzed. No. 0.46; Pred. No. 0.46; 97; Conservative 74; Mismatches 133; Indels 127; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900 YANRTEL --- INKORTGGNNTYVILQEGTSNTPL-------GWVNINDVTTQN-- 942
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DLRYNKEYYWVNIDYLNRYM----YANSRQIVFNTRRNNNDFNEGYKIIIKRIR-GNTND 318
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                                                                                                                                                                                                                                                                                                              365 --QTKDINDNIIFQIQP------MNNTYYASQIFKSNFNGENI 400
                                                                                                                                                                                                                                                                                                                                                                                            719 LLOANNKUDSVINGVERYKVGDPILFNETNKYSPILF-NNLKGSII 763
623 NYQIESIDPGNWFEIAKDVLSKNII-----NELTDMY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111 60 1909 | 1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3716, Application US/10092411A
GENERAL INFORMATION:
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DS-10-092-411A-3716
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27.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             185 CKLIDTIKVKELTGINESKT-ITFEINKIPDTGLITSDSDNINMAIRDFYIFAKELDGKD 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              288 -SILDTLOINE -- EQFBEAYIQFQONQ-----EVSAEAQLLN-------D 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        244 INILENSLQYTNVVKDYWGN-----DLRYNKRYYMVNI--DY-LNRYMYANSRQIVFNT 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323 SNOLFNYLKOKR--KDILDNAYIMTYDMRESLRNYLESMATDFKVNGF-----FNK 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   995 RRNNNDFNEGYKIIIKRIRGNINDTRVRGG------DILYFDWTINNKAYNLFWKNE 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 372 RKKKEREQ-----IKRLNEATTQLQEKVNQQVRQPLREDMSFLTRFINKHAVNEKILNO 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              346 ------TMYADNHSTEDIYAIGLREQT-KDINDNIIPQIQPMNNTYYYASQIFKSN 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            426 EXDVVPSLISELYQTQTSISNTYVLIFSDEVIKALNKKIENESTP------LFEEA 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         395 PHOENISCICS-----IGTYRPRIGGEWYRHNYLVPTVKOGNYASILESTS 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   475 VNHVQVNELSSDENEDRYEYDRYIELNTEKDSLISHNYKHYYI---HLDDSLDKLIGRTE 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59 QLNPIFFFF FKLGSSGEDRGKV------IVTQN---ENIVINSMTESFSIS 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         126 EIN--FPSNKFNLGFTFQDTPGVDSNVATHQSSTEQFMYTSNLLFYTVDYNHVQSALNFK 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101 FWIRINKWVSNLPGYTIIDSV----- 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----ISNEINFILKONEDSEQSINFSYDISNNAPGYNKWFFYTVINNAMGNMKIYIN 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 IPFNIFSYTNNSLLKDIINEYFNNINDSKILSLQNRKNTLV----DTSGYNAEVSEBGDV 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72 LPSSPVPTTSNTALVSVAKE-----DELIANLTCOCYTKLKTYNDVKQMNRQNVDVESI 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    184 FMKRINE --VGIPIIFVINGIDKHNEEEITFETFKSRVEKSIKDWDIKLQDTYYVSKFDH 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 181;
                                                                                                                                                                                                                                                                                                                                                                                                     Length 1151:
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                                                                                                                                                                                                                                                                                                                                                                                         Query Match 4.9%; Score 116.5; DB 6; Best Local Similarity 17.9%; Pred. No. 0.81; Statches 97; Conservative 90; Missatches 175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRODE TITLE CARE TO THE TOTAL OF STATE 
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GENERAL INFORMATION:
                                                                                                                                                                                                                                       ; ORGANISM: Staphylococcus epidermidis
GS-10-092-411A-3242
NUMBER OF SEQ ID NOS: 5676
SEQ ID NO 3242
LENGTH: 1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         441 THW 443
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                                                                                                                                                                                      TYPE: PRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      489 EQGETPHFWTHQF------RHTYAVKLINGGADILTIQELLAHSSPEWILRYAKLIDDT 541
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            232 FYI-----FAKELDGKDINILENSLQ-----YINVVKDYWGN-DIRYNKEYYWVIDY 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                279 LNRYM-----TANSRQIVF-----318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             314 IRRFLNDIITQNYAIAPYQDIRFLIYPQDLPKHEKKNSSQIDYIPDFVLEQLFEHINDLH 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           319 ------TRVRGGDILYPDMTINKA-----YNL-----FMKNETMYADNH 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    129 KLADIIAVLIADSKSKSTKDNNPNNYIFAIYKGKRKGMPFTQHMVRAHLNHLSKTKNIID 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 401 --SGICSIGTYRFRIGGDWYRHNYLVPTVKQG--------NYASLLEST 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 4.94; Score 117; DB 6; Length 591; Best Local Smilarity 19.74; Pred. No. O. 4, 1. Indela 224; Gaps Motches 116; Conservative 84; Mismatches 176; Indela 224; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63 ODGIKNYRDKRKNVFFRIKSKNLNLBFKYLPLKLIVKEDWSLSNLFNTGAVKINKIAKF- 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68 FKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRIN-----KWV--SNLP----G 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    115 YTIIDSVKNNSGWSIGIISNFLVFTLKQNRDSBQSINFSYDISN---NAPGYNKWFFVTV 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                160 STIVFGDYEYKSGLASFLKNMYINLIKFIDKREEWEKDKWDIRNLEKYGLSYNK----TL 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             172 THNMMGNMKIYINGKLIDTIKVKELFGINFSKTITFEINKIPDFGLITSDSDNINMMIRD 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      354 PYIRVLTRFPQNISKNKETRNSLNELDRCHIEAYIBFLFBYAANKHLOSTKNFVREELKT 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 --SIQN----RKNTL--VDISGYNAE-----VSEE------GDVQLNPIFPED 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MILPENIESYTHNS----- 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 MSIPINL - - PTNSTMINELCTLQSRTINIKGEVLITEIYDDYFFKNDEWHITAFNKFKGF 62
            PRIOR FILING DATE: 1998-08-13
PRIOR APPLICATION NUMBER: US 60/064,964
PRIOR FILING DATE: 1997-11-06
PRIOR PELCATION UNIMBER: US 60/055,779
PRIOR FILING DATE: 1997-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 3242, Application US/10092411A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ), ORGANISM: Staphylococcus epidermidis
US-10-092-411A-4675
                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 5676
SEQ ID NO 4675
LENGTH: 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-092-411A-3242
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97 FSISFWIRINKW----VSNLPGFTIIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQS 149
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     485 LSTFLKTTKLLSSDFWINTAQILKRKNNIVIDSKNFRKKEMKDY-----FRQKFQKIAL 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 539 B-----GGGYPTLFSVLENBONDLNAKKTLIVEAKORN------YFKKDNLL 579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      330 DATINNKAYNLFWKNETWYADNHSTEDIYAIGLREOTKDINDHIIPQIOPMNNYYYASO 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           580 QPVINICQYNYINFNGKFY------KQTKGIPQGLC--VSSILSSFYXATL 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                390 -----IFKSNFNGENISGICSIGTYRFRIGGDWYRHNYLVPTVKQGNYASILE---ST 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     217 LFSYTTDNKCVTQFINEFFYNILPKDFLTGRNRKNFQKKVKKYVELNKHELIHKNLLLEK 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        277 INTREISWAQUETSAKHFYYFDHENIYVLWKLLFRWIFED---LVVSLIRCFFYVTEQQKS 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376 LGF-----APGKLRLIPKKTTFRPINTFNK----KIVNSDRKTTKLTTNTKLLNSHLM 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193 VKELTGINFSKTITFEINKIPD----- 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     425 LKTLKNRMFKDPFGFAVFNYDDVMKKYEEFVCKWKQVGQPKLFFATMDIEKCYDSVNREK 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         227 ------MUIRDFYIFAKELDGKDINILFNSLQY-TNVVKDYWGNDLRFNKEFYWYNI 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   277 DYLNRYMYANSRQIVENTRRN-NNDFNBGYKIIIKRIRGAFNDTRVRGGDILYF----- 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49 --NARVS-EEGDVQLNPIFPFDFK-----LGSSGEDRGKVIVTQNENIVI-NSMYES 96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 897;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 015389-002610US
TELECOMOUNICATION INFORMATION:
TELEPRONE: (415) 576-0200
TELEFAX: (415) 576-0300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80: Mismatches 174:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 IPSY-TNNSLLKDIINEYENNINDSKILSLONRKNTLVDTSGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRILIGATION NUMBER: US 08/912,951
FILING DATE: 14-AUG-1997
FILING DATE: 14-AUG-1997
FILING DATE: 14-AUG-1997
APPLICATION NUMBER: WO PCT/US97/17618
FILING DATE: 01-CCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: WO PCT/US97/17885
FILING DATE: 01-OCT-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 4.5%; Score 107.5; E
Best Local Similarity 18.5%; Pred. No. 2.3;
                                                                                                                                                                                            APPLICATION NUMBER: 05 08/851,843
FILING DATE: 06 MAY-1997
APPLICATION NUMBER: US 08/854,050
FILING DATE: 09-94XY-1997
                            APPLICATION NUMBER: US 08/844,419
FILING DATE: 18-APR-1997
                                                                                                                          US 08/846,017
                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US 08/911,312
FILING DATE: 14-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; MOLECULE TYPE: peptide
; SEQUENCE DESCRIPTION: SEQ ID NO: 189:
02-09-721-456-189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Apple, Randolph Ted
REGISTRATION NUMBER: 36,42
                                                                                                                 APPLICATION NUMBER: US 08
FILING DATE: 25-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: 189:
SEQUENCE CHARACTERISTICS:
LENGTH: 897 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: <Unknown>
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
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                                                                                                                                                                                                               27;
                                                                                                                                                                                                                                                                                                                                                            206 TVKFEVDLKSKDASMLPEKVHLENEFSIEVLPAKTKSL--TFWVVFDT-----EVNEP-- 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             58 VQINPIFP-----FDFKLGSSGEDRGKVIVTQMENIVYNSMYESFSISFWI-----RIN 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  557 -KLVVVPPQIELPPVDPVINLSGE----INELEGNLSMMDYSDPNAEFYVYKELEEGG 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       107 KWVSNLPG-----YTLIDSVKNN----SGWSIGIISN----FLVFTLKQN-----EDSE 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11 BYLYRFYGKTREKSYTIENFTKOBFDKFSGIAINVYANGKESGLVVLKKENIKLIDLESV 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148 OSINESYDISNNAPGYNKWEFY - TVTNNAMGNAKIYINGKLIDTIKVKELTGINESKTI 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               371 DSISATYNVDTWELKLD-WNYTNSSVTFEV---LKKGINSNEYEII--SQLTQNSFSTEF 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    206 T----FEINKIPDTGLITSDSDNINMIRDFYIFAKELDGKDINI------LFNSLQYTN 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGRQFWDLEKIAIRVVANGFESKIN-------EISRDDITITSLWLPLISSIMYIL 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VVKDYWGND-----EYYMVNIDY 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  474 FIRSYPDFDGDGVGDFSGVAEKVDYLKSLGVDTVWFLPFNKSKSYHGYDVEDYYDVEPDY 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       279 LNRYMYANSRQIVENTRRNNNDFNBGYKIIIKRIRGMTNDTRVRGGDILYFDMTINNKAY 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GILODLDNAIXVL----REN----GIRVVMDLVVNHTSDTHPWFLDAV--ENTINSPYW 582
                                                                                                                                                                                                               70; Mismatches 157; Indels 136; Gaps
                                                                                                                                                                                                                                                                                                    2 TIPFNI-FSYTNNSLLKDII---NEYFNNINDSKILSLQNRKWTLVDTSGYNAEVSEEGD 57
                                                                                                       Justy Match 4.5%; Score 108; DB 1; Length 976; Best Local Similarity 21.8%; Pred. No. 2.4; Index 138 Matches 101; Conservative 70; Missactches 187; Index 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ligence, Josepha Mahaura, foru Chapana, Karan B. Walkaura, foru Chapana, Karan B. Walia, Cessy B. Walia, Cess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          339 NLFM------KNETMYADNHSTEDIYAIGLREOT-KDIN-DN 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     583 NYYIMSLDEPONKNHWHYKVNSKGOTVWYFGLFDSSMPDLNYDN 626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/974,549A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/09/721,456
FILING DATE: 22-Nov-2000
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILLING DATE: 19-NOV-1997
APPLICATION NUMBER: US 08/724,643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READMELS FORM:
MEDIUM TYPE: Ridged disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONTRACTOR 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: San Francisco
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COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 94111-3834
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: ORGANISM: Bacterial
                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425
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615 LSTFLKTTKLLSSDPWIMTAQILKRKNNIVIDSKNFRKKEMKDY-----PROKFOKIAL 668
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               569 E-----GGQYPTLFSVLENEQNDLNAKKTLIVEAKQRN-----YFKKDNLL 709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      710 OPVINICOYNYINFNGKFY------KQTKGIPQGLC--VSSILSSFYYATL 752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              390 -----IFKSNPNGENISGICSIGTYRFRLGGDWYRHNYLVPTVKQGNYASLLE---ST 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      753 EESSLGFLRDESMNPENPN-----VNLLARLTDD-----TLLITTQENNAVLFIEKLINV 802
                                                                                                                                                                                                                                                                                                                                                                             347 LPSTTTDNKCVTQFINEFFYNILPKDFLTGRNRKNFQKKVKKYVELNKHBLIHKNLLLEK 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            407 INTREISWAGVETSAKHFTYFDHENIYVLWKLLRWIFED---LVVSLIRCFFYVTEGGKS 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97 FSISFWIRINKW-----VSNLPGYTIIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQS 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           464 YSKTYYFRKNIMDVIMKMSIADLKKETLAEVQE-------KEVEEWKKS 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           150 INFSYDISNIAPG------YNWWFFVTVTNIAPGKHXIXINGKLIDT-IK 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  506 LGF-----APGKLRLIPKKTTFRPINTFNK----KIVNSDRKTTKLTNTKLLNSHLM 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ------ 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 555 LKTLKNRAFKDPFGFAVFNYDDVMKKYEEFVCKWKQVGQPKLFFATMDIEKCYDSVNREK 614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               330 DWIINNKAYNLFWKNETWYADNHSTEDIYAIGEREGTKDINDNIIFQIQPMNNTYYASQ 389
                                                                                                                                                                                                                                                                                                      49 --NABVS-EEGDVQLNPIPPFDFK-----LGSSGEDRGKVIVTQNENIVY-NSWYES 96
                                                                                                                                                                                                                              80; Mismatches 174; Indels 191;
                                                                                                                                                       DB 5; Length 1007;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPICONTY COCK, PROMER R.
Makante, Totu
Chapan, Karen B.
Chapan, Carlina B.
TITLE OF NEWETYON: TANDER OF SEQUENCES; 777
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STREET: Two Embarcadero Center, Eighth Floor
                                                                                                                                               4.5%; Score 107.5; I
) MOLECULE TYPE: peptide
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SEQUENCE DESCRIPTION: SEQ ID NO: 187:
US-09-721-456-187
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COMPUTER READABLE PORM:
COMPUTER TAR PC COMPETABLE
COMPUTER: TAR PC COMPETABLE
COMPUTER: TAR PC COMPETABLE
COPERATING SYSTEM: PC-POSYNG-DOS
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US-09-721-456-110
Sequence 110, Application US/09721456
GENERAL INFORMATION:
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STATE: California
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                                                                                                                                                                                      Best Local Similarity 18.5
Matches 101; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
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                                                                                                                                                              Query Match
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               623 EBSSLGFLADESMNPENPN-----VNLLMRLTDD-----YLLITTQENHAVLFIEKLINV 672
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APPLICATE CROID TOTAL REGISTRATE CROID REGISTRATE CROID REGISTRATE CROID REGISTRATE CROID REGISTRATE CROID REGISTRATE CROSS REGISTRATE REGISTRA
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COMPUTER REALABLE POPH: CPGA/AG-10. VORESON #1.30

SOFTWARE: PACKETIN RELEASE #1.30

SOFTWARE: PACKETIN RELEASE #1.30
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STREET: Two Embarcadero Center, Eighth Floor
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REGISTRATION NUMBER: 36,429
REFERENCE/DOCKET NUMBER: 015389-002610US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 01-0CT-1997
PAPLICANTON NUMBER: WO PCT/US97/17885
FILING DATE: 01-0CT-1997
PAREY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 14-AUG-1997
PULLING DATE: 14-AUG-1997
FILING DATE: 14-AUG-1997
APPLICATION NUMBER: W0 PCI/US97/17618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/974,549A
FILING DATE: 19-NOV-1997
APPLICATION NUMBER: US 08/724,643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 01-OCT-1996
APPLICATION NUMBER: US 08/844,419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 08/846,017
FILING DATE: 25-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08/911,312
FILING DATE: 14-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/09/721,456
FILING DATE: 22-NOV-2000
CLASSIFICATION: <URKNOWN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 08/851,843
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TELEFAX: (415) 576-0300
INFORMATION FOR SEQ ID NO: 187:
                                                                                                                                                                                                                                                                                                                                     NGS-09-721-456-187
Sequence 187, Application US/09721456
GENERAL INFORMATION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    664
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-MAY-1997
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SECURNCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: California
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                                                                                                                       440 STHWGF 445
                                                                                                                                                                                                      673 SRENGF 678
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TITLE OF INVESTIGATION CALLS AND ALTO, ACTO SEQUENCES RELATING TO STAMPHILOCOCC TITLE OF STAMPHILOCOCC PROPERTIES AND STAMPHILOS AND STAMPHILOS THE MERRERNES, 037396-101.

FILE REPRESENCE, 037396-103.

CORRESP REPLICATION WINDER, 0470,053,411A.

CORRESP REPLICATION NAMES, 2002-04:07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 834 KEIFLLSELLAGK-------NDYKLTLENYVL-IYYLEKIIFQANGR 872
670 E-----GGQYPPLESSVENEQNDLNAKKTLIVEAKQRN------YFKKDNLL 710
                                                                                                                 330 DWTINNKAYNLFWKNETWYADNHSTEDIYAIGLREQTKDINDNIIFQIQPKNNTYYYASQ 389
                                                                                                                                                                                       711 OPVINICOYNYINFNGKFY------KQTKGIPQGLC--VSSILSSFYATL 753
                                                                                                                                                                                                                                                                              390 -----IPKSNFNGENISGICSIGTYRFRLGGDWYRHWIVPTVKGGNYASILE---ST 439
                                                                                                                                                                                                                                                                                                                                                    754 BESSLGFLEDESMNPENDN-----VNLLMRLTDD-----YLLITTGENNAVLFIEKLINV 803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     574 YEYENEK-TKOKLNELNNKLKIEMNOKHLT-ENLTQTSKEIN--NLELKNEKEMQ---- 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64 FPFDFKLGSSGEDRGKV---IVTQNENI-----VYNSMYESFSISFWIRINKWVSNLPGY 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26 -----QLGPESYDQVKSAADLSAQKDEIEREINIYNKNYQSYE----IEINRLKELVKGK 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 116 TIID-----SVKNNSGWSTGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGYNKWFFV 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               777 KILNLEELROSIEKTN-----EKIDETNSOIATISYKIDNNSNKFNK---- 818
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER TILDAD DARE: 1309-041-07
PRICE APPLICATION NUMBER: US 95/144, 001
PRICE PILLIN DARE: 1398-06-13
PRICE PLILIN DARE: 1398-06-13
PRICE PLILIN DARE: 1398-11-08
PRICE PLILIN DARE: 1397-11-08
PRICE PLILIN DARE: 1397-11-08
PRICE PLILIN DARE: 1397-11-08
PRICE PLILIN DARE: 1397-10-14
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GENERAL INFORMATION:
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US-10-092-411A-5178
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   227 -------MAIRDFYIFAKELDGKDINILFNSLQY-TWVWXDYWGNDLRYNKBYYWNI 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 616 LSTFLKTTKLLSSDFWIMTAQILKRKNNIVIDSKNFRKKEMKDY-----FRQKFQKIAL 669
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    108 INTREISWMOVETSAKHFYYFDHENIYVLWKLLRWIFED---LVVSLIRCFFYVTEQQKS 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          465 YSKIVYYRKHIWDVIMKMSIADLKKETLAEVQE-------KEVESWKKS 506
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18.5%; Pred. No. 2.8;
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/721.456
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REGISTRATION NUMBER: 36,429
REFERENCE/DOCKET NUMBER: 015389-0026100S
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                                                                                                                                                                     CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/974,549A
                                                                                                                                                                                                                                                                                       FILING DATE: 19-NOV-1997
APPLICATION NUMBER: US 08/724,643
FILING DATE: 01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 06/844/419
APPLICATION NUMBER: US 06/844/419
APPLICATION NUMBER: US 06/846.017
FILING DATE: 25-APR-1997
FILING DATE: 25-APR-1997
FILING DATE: 06-848/1997
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APPLICATION NUMBER: 02 08/911,312
RILING DATE: 14-AUG-1997
APPLICATION NUMBER: US 08/912,951
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FILING DATE: 14-AUG-1997
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ING DATE: 09-MAY-1997
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SEQUENCE PESCRIPTION: SEQ ID NO: 110:
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TELEPAX: (415) 576-0300
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FILING DATE: 01-0CT-1997
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SEQUENCE CHARACTERISTICS:
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JORGANISM: Staphylococcus epidermidis
US-10-092-411A-4341
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US-10-092-411A-4341
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TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS
                                                                                                                    APPLICARY: JUN DODGELE-STEAM CALL STRUCKEL STAND ACTO SEQUENCES RELATING TO STAPHYLOCOCCUS TITLE OF INVENTION: TITLE OF INVENTION: TITLE OF INVENTION: TITLE STRUCKEL STAND AND AND AND AND AND AND ADDRESSES OF INVENTION: TITLE SPERENCE.
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                                                                                                                                                                                                                                                                   COMMERCE PAIRCENTING MORE; UNIT (1970-111).
COMMERCE PAIRCE PAIRCENTING MORE; UNIT (1970-111).
COMMERCE PAIRCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 294 TRRNNN----DFN-----BGYKIIKRIRGNINDTRVRGGDILYFDWTINNKAYNLFWK 343
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                                   Sequence 3159, Application US/10092411A
GENERAL INFORMATION:
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US-10-092-411A-5114
US-10-092-411A-3159
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TITLE OF INVENTION: EPIDEMBIDS FOR DIAGNOSTICS AND THERAPBULICS CURRENT APPLICATION WINNERS. 103796-111A
CURRENT PILLING DATE: 2002-03-07
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                                                                                                                                                                                                                                                                                                                                                                                             PRICE PLINE DATE | 1997.144.001
PRICE PLINE DATE | 1996.00.13 0.0044.964
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GENERAL INFORMATION:
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 - Search completed: November 7, 2002, 14:53:14 Job time : 20 secs

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    (bases 1 to 447)
    Elbuda, M., Kurazono, H., Binz, T., Niemann, H.,
BRUSE, D., Elbuda, M., Kurazono, H., Binz, T., Niemann, H.,
Gill, D. M., Boquet, P. and Popoff, M. R.
    Nociocide sequence of Clostridium bothlinam Cl neurotoxin
Nucleat Acids Res. 18 (15), 4524 (1990)

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/strain="phage from 468C botulinum C. strain"
/db_xref="taxon:12448"
                                                                  Cl neurotoxin.
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/note="Cl neurotoxin (AA 1-1291)"
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                                                                         Clostridium botulinum C phage gene
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/protein_id="CAA37780.1"
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Clostridium botulinum C phage
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Popoff,M.R.
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US-09-910-186A-10 (1-450) x CBCPHGCl (1-4479)
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                                                                                             FRENIIDPETSTRKINNTFAAQEGRGALSIISISPRENITYSRATUNYGERRKKSE
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FNSLQYTNVKDYMGNDLRYNKEYYMVNIDYLNRYMYANSRQIVFNIRRNNDFNEGY
JIPDRPSRMSNPNLNKPPRVTSPKSGYYDPNYLSTDSDKDTFLKEIIKLFKRINSRRI
                                                    SEELIYRLSTDIPFPGNNNTPINTPDFDVDFNSVDVKTRQGNNWVKTGSINPSVIITG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Edwica K. Feljil.W. Teuruki K. Marakami T. Indoh.T.,
Poksasaw N. Teksehi K. Sjuco, B. and Ogma, K. Teres
The complete nucleotide sequence of this game coding for botalinum
Type CI versit in the CFS phage agence of this game coding for botalinum
Education Stophys. Mes. Commun. 717 (3), 1304-1311 (1990)
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toxin and whole nucleotide sequence of its light chain component
appl. Environ. Microbiol. 57 (4), ll68-1/72 (1991)
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                                                              940 GGAATATGITCAATAGGTACTIATCGITTTAGACTIGGAGGIGATTGGTATAGACAAA 3999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4000 TATTTGGTGCCTACTGTGAAGCAAGGAAATTATGCTTCATTATTAGAATCAACACACAACT 4059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          422 TyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSerThr 441
                                                                                                                                                                                                                                                                                                                                                        382 AsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSer 401
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Deterripphage c:st (from C. botulinum type C-Stockholm) DNA
Bacterlophage c:st
                                                                                                                                                            362 LeuArgGluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGlnProMetAsn
          linear
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/db_wref="taxon:12336"
255. .260
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/note="SD sequence"
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/note="ORF for Cl toxin"
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Comparative analysis of C3 and boculinal neurotoxia genes and their environment in Clostridium botulium types C and D 3. Benteriol. 175 (22), 7260-7268 (1993) 83049300
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Microbiennes, 28, Red du Docteur-Roux, F-75724 Paris Cedex 15,
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          3687 INTRIGINATECGARCICACGACAAATIGITITTAATACACGIAGAAIAATAATAATGACITC 3746
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                                                                                                    222 SerAspAsnIleAsnMetTrpIleArgAspPheTyrIlePheAlaLysGluLeuAspGly
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LE LACE TO ALTER AND ALTER DEC-1991) K. Tauzuki, Sapporo Medical College, Dept y, South I West 17, Sapporo D60, JAPAN 4 this Sacyance version replaced gi:40386. ŏ .9613) murs. K. Fujii.N., Yokosawa.N. and Oguma.K. juncte of the gene for one of the components produced by Clostridium botulinum type C nism="Clostridium botulinum"
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9188 CATTGGGGTTTTGTACCTGTAAGTGAA 9214

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8407 8887 8947 9067 8467 8527 8587 8707 8767 8827 361 161 221 343 261 301 321 341 381 407 421 162 GlyTyrAsnLysTrpPhePheValThrValThrAsnAsnAetMetGlyAsnMetLysIle 181 LysksnAsnSerGlyTleGlyIleIleSerksnPheLeuValPheThrLeuLys 302 AsnGluGlyTyrLysIleIleLysArgIleArgGlyAsnThrAsnAspThrArgVal TGGATTAGAATAAATAAATGGGTAAGTAATTAACGGGGATATACTATAATTGATAGTGTT GlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSerAsnAsnAlaPro 3348 GGATACAATAAATGGTTTTTTTGTAACTTACTAACAATATGATGAAGATAT 182 TyrileAsnGlyLysLeuileAspThrileLysValLysGluLeuThrGlyIleAsnPhe SerLysThrIleThrPheGluIleAsnLysIleProAspThrGlyLeuIleThrSerAsp 8458 AGCAAAACHTHAAATAAATAAATAAATTCCAGATACCGGTTGATTACTTCAGAT SerAspAsnileAsnMetTrplleArgAspPheTyrllePheAlaLysGluLeuAspGly 242 LysAspileAsnIleLeuPheAsnSerLeuGlnTyrThrAsnValValLysAspTyrTrp 3588 AAAGATATTAATATTATTTAATATAGCTIGGAATATAGTAATGTIGTAAAAGATTATTIG 262 GlyksnAspleuArgTyrksnLysGluTyrTyrMetValAsnIleAspTyrLeuAsnArg 3648 GGAAATGATTTAAGATATAATAATAATATTATATGGTTAATATATTTAAATAGA 282 TyrMetTyrklaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAspPhe 9708 TATATGTATGCGAACTCACGACAATTGTTTTAATACACGTAGAAATAATGACTTC 3768 ANTGANGGATATAAAATTATAAAAAGAATCAGAGGAAATACAAATGATACTAGAGTA 322 ArgGlyGlyAspileLeuTyrPheAspMetThrileAsnAsnLysAlaTyrAsnLeuPhe NetLysksnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGly LeuargGluGlnThrLysAspIleAsnAspAsnIleIlePheClnIleGlnProMetAsn 8948 ITAAGAGAACAAACAAAGGATATAAATGATAATAATATTATATTCAAATACAACCAATGAAT 382 AsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSer Gly11eCysSerIleGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHisAsn TyrLeuValProfhrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSerThr 1128 TATTIGGTGCCTACTGTGAAGCAAGTATTATGCTTCATTAGTAGAATCAACATCAACT 442 HisTrpGlyPheValProValSerGlu 450 342) 362 1 8006 202 222 402 422 3168 142 a a a ò a g g à g g g g g 2 용 à ŝ 윱 à a ô 8 8 ò ò a ô à à à à à à

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/protein_d="Can47060.1"
/db_xref="Gi:509275"
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5424. 9299
/gene="BoNt/C1"
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/gene="BoNT/C1"
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/gene="BoNT/C1"
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(VT) Themagyaltunin complex*
/protein_id='CAA756a.1"
/AD_xref='C1939271's
/translation='NSOTHANDLRNNEWFFISPSNNTNKVLDKISQSEWILHWELSGA
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TROGHILIKLI
                                                                        CBPICNTC1 9689 bp DNA linear BCT 15-FEB-1999 Clostridium botulinum phage 1C, CHn-14, CHn-33, Chn-138 and BONT/C1
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WKLEYISSSNGFRESNVAEPNKYLAYNDYGFIYLSSSSNNSLANDIKIAINSYIICTL
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Sabulteed (25-MAY-193) D.F. Rauser, Institut Pasteur, Unite des
Toxinos Microbinose, Institut Pasteur, 28 rue duDocteur-Roux,
P-75724 Paris cedex, Pasker
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/C1-heamsgqluitinfin complex"
/protein_id='CAA47059.1"
/db_xref='G1:4376225"
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/db_xref="taxon:1491"
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2 (bases 1 to 9689)
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/gene="Chn-33"
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/gene="CHn-33"
/codon_start=1
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/gene="CHn-33"
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/gene="CHn-14"
complement(253. .633)
/gene="CHn-14"
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1803. .1808
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/gene="CHn-138"
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10430 CCAATATTTCCATTTGACTTTAAATTAGGTAGTTCAGGGGAGAGATAGAGGTAAAGTTATA 10489 81 ProllePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile 63 8 ò 유

101 102 TrpileArgileAsnLySTrpValSerAsnLeuProGlyTyrThrileIleAspSerVal 121 82 ValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe 10490 GEAACCCAGAATGAAAAATTGTATATAATTCTATGTATGAAAGTTTTAGGATTT ð g ò

10610 AAAAATAACTCAGGTTGGAGTATAGGTATTATTAGTAATTTTTTAGTATTTAATTTAAAA 10669 10550 TOGNITAGAATAATAANGOTAAGTAATTAACTGGATATAACTATAATTGATAATAGTT 10609 LysasnasnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuValPheThrLeuLys 141 122 a ò a

GloAsnGluAspSerGluGlnSerlleAsnPheSerTyrAspIleSerAsnAsnAlbFo 161 142

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Akturda K. Boquet.P. and Popoff.M.R. of the bothlum memoroxin Cit gene and its associated rotein pense in Coloritium bothlum C 468

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Obiennes, 28, Rue du Docteur Roux F-75724, Paris Cedex
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NY FSYLDNSY IRDSSKYLLEY NKNYQLY NY VEPET SLY EVNDNNKSYLSLKNYDGINI SSYKFKLINI DESKYYVQKWDECII CYLDGTEKYLDISPENNRIQLYSSKDNAKKITV ATDLEREDCITESYNDKY PSLSLEDGDY NWY ICNDNNK VPRGABLETLES 931.

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MRNA

RBS

Suc

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2297

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7 10618 GAATATTTCAATATATTAATGATTCAAAAATTTTGAGCCTACAAAACAGAAAAATACT GluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThr 22

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19 LeuValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn 10678 TTAGTGGATACATCAGGATATAATGCAGAAGTGAGTGAAGAAGGGGGATGTTCAGCTTAAT 42

10917 121 7 TrplleArglleAsnLysTrpValSerAsnLeuProGlyTyrThrlleIleAspSerVal 10858 IGGATTAGAATAATAATAGGTAAGTAATTTAGCTGGATATATACTATAATTGATAGTGTT LysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuValPheThrLeuLys

102 122 142

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182

11158 AGCARACTATAGGATTGGAATAGATTGCAGATAGGGGTTGGATTGCTGAGT 11217 221 SerLysThrileThrPheGluileAsnLysIleProAspThrGlyLeuIleThrSerAsp 202 8 à â

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099-2493, Japan (E-mailit-oyama8bioindustry.nodai.ac.jp.
Tel:81-152-48-3838(ex.368), Pax:81-152-48-2940)
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/gene="ha-17"
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/gene="ha-33"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complement(621. .2492)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(621, .2492)
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6. .545
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1. .11631
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HA-70, HA-17, HA-33, NTNHA,
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Submitted (0.12Ep-2000) Tohru Ohyama, Tokyo University of
Agriculture; Faculty of Bioindustry; Yasaka 196, Absahiri, Hokkaido
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                                                                                                                                                                                                                                               11278 AAAGATATTAATTTAATTAATTGCITGCAATATCTAATGTTGTAAAAGATATTGG 11337
                                                                                                                                                                                                                                                                                                                                                                                                         11338 GGAAATGATTTAAGAPATAATAAAAAATGATTATATGGTTAATATAGATTATTAAATAGA 11397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11398 TATATGTATGGGAACTCACGACAAATTGTTTTTAATACACGTAGAAATAATGACTTC 11457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11458 ARTGAAGGATATAAAATTATAATAAAAAGAATCAGAGGAAATACAAATGATACTAGAGTA 11517
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11698 AATACTTATTATTAGGGATGTGGAATATTTAAATGAAATTTTAATGGAGAAAATATTTGT 11757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11758 GGAATATGTTCAATAGGTACTTATCGTTTTAGACTTGGAGGTGATTGGTATAGACAAAI 11817
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        381
                                                                                                                                                                                                                                                                                                                                                              262 GlyAsnAspleuArgiyrAsnLysGluIyrTyrMetValAsnIleAspTyrLeuAsnArg 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302 AsnGluGlyTyrLysIleIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgVal 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           401
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               422 IyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSerThr 441
                                          222 SerAspAsnIleAsnMetTrpileArgAspPheTyrilePheAlaLysGluLeuAspGly 241
                                                                                                                                                                                                    LysAspileAspileLeuPheAspSerLeuGlnTyrThrAsnValvalLysAspTyrTrp 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 282 TyrwetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAsnAspPhe 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MetLysAsnGluThrMetTyrAlgAspAsnHisSerThrGluAspIleTyrAlaIleGly 361
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        362 LeuArgGluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGlnProMetAsn
                                                                            11218 TCTGATAACATAFGTGGATAAGACATTTTATATATTTGCTAAAGAATTAGATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AsnIhrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSer
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J. Biol. Chem. 277 (4), 2650-2656 (2002)
21659747
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VERSION
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10308 GAATATTTCAATAGTATTAATGATTCAAAATTTTGAGGTTACAAAATAAAAAATGT 10367

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22

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22 GluTyrPheAsnAsnLleAsnAspSerLysIleLeuSerLeuGlnAsnArqLysAsnThr 41

10428 CCANTATCCATTTGACTTTAAATTAGGTAGTTCAGGGGATGATAGGTAAGAGGTAAAGTTATA 10487

10547 10607

121

101

GlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSerAsnAsnAlaPro 161

142 162

10668

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10787

181

10847

LICHAKOSILAQESVYKOILONKFTDLSKASIPPOTLKLIKETTERTFIDLSNESOIS MRYUNFLNKASIOVYUDIIPRENSYMENTININIKTREPIORCHNINDRESILI NSITERIPIEKELIOALIKESVASOVEOVKERLESVOLLLFATROPIORONIIEDISGK NSITERSVELYVGYMEDELIKESVAROPELIKESVAROPTMILINNETICKHAPPOROL DKTRLIGNKVNNCGMELYPEDNGLYFEIIDSNGNOESVYLSNVINNWYYISISVDRL KDOLLIFINDKNVANVEIEDILNIYSTNVISLVNKNNSIYVEELSVLDKPVASEEVIR

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/codon_start-1

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/gene-"nt

BASE COUNT ORIGIN

Scores: ò

7.46e-114 1824.00 85.84% 77.88% Percent Similarity: Best Local Similarity: Best Local Sta Query Match: DB:

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JS-09-910-186A-10 (1-450) x AB037920 (1-11631)

INTO CHARLIC AND ALTO THE SECOND INTO CHARLES TO CHARLE VIPERFSSDTNPSLSKPPRPISKYQSYYDPSYLSTDBOXDTFLKGIIKLFKRINERDI GKKLINYLVYGSP#GDSSTPEDFTRHTTNIAVEKPENGSWKVINIITPSVLIPG PLDNILLDYTASLILOGOOSNPSFEGFOTLSILKVAPEFLLIFSDVISNOSSAVLGKSI FORDVIALMEETHSLEDGVINFSORMSTROVSGESOOGPOOPEELYTFGGS DVEITPOLEFILGREETHSLAWYRDIARENNN WEITPSSKSSNIDKYRFE IKTIENCLEGRVKRHKDSYGMVSKALSRITTRFNHISYGMYDSLSYGADAIKAKIDE BYKKYSGSDKENIKSGVENLKNSLDVKISEAMNNINKFIRECSVTYLFKNMLPKVIDE /translation-"MTWPVKDFNYSDPVNDNDIDYLRIPONKLITTPVKAFMITONIW ENKFDLKTKTELINLIDSHNIILVGEVDRLKAKVNESFENIIPFNIFSYTNNSLLKDM INEY FNSINDSKILSLQNKKNYLADTSGYNAEVRVBGNVQLNPIFPEDFKLGSSGDDR GRYIVTQNENIVYNAMY BSFSISPHIRINKNVSNLFGYTIIBSVKNNSGWSIGIISNF 4227 t /product-"neurotoxin" /protein_id-"BAA90661.1" KIEHYASLLESTSTHWVPVPASE" /db_xref="GI:6939795" 1254 c

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202

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262 282

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Length: Matches: Conservative: Mismatches:

322

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400 IleSerGlyIleCysSerIleGlyThrTyrArgPheArgLeuGlyGlyAsp---Trg
                                                                                                                                                                                          11433 AGGCTTGGAATACAATTGGTAGTTATAGTTTCAAACTTGGAGATGACTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             neurotoxin consisting of botulinum neurotoxin D and Cl. Clostridium botulinum D (strain:South African) DNA. Clostridium botulinum D (atrain:South African) DNA. Bacteria Firmicutes; Clostridia; Clostridiales; Clostridia
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botulinum types C and D organisms
Biochim. Biophys. Acta 1307 (2), 123-126 (1996)
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Instructe for Mircolal Disasses, Research Center for Infertious Disasses; 1, Tamadacka, Suita, Osaka 550-
(R-mail.Kohji8Mircolaka va.c.jp, Tel:81-6-6879-8844), Fax:81-6-6879-8844,
                                                                                                                                                                                                                                                                                                          419 ArgHisAsnTyrLeuValProThrvalLysGlnGlyAsnTyrAlaSerLeuLeuGl
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GKKLINYLVVGSPPMGDSSTPRDTFBFTTNIAVEKFENGSWK
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PCMDPVIALMHELTHSLHQLYGINIPSDKRIRPQVSEGFFSQDGP
DVEIIPQIERLQLREKALGHYKDIAKRLNNINKTIPSSWSNIDK
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YTT INGFNLTTKGFNIENSGONI ERNPALOKLSSESVVDLFTKVC
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/db_xref="taxon:36829"
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KRGWYNDTRVRGENULYPHTIDNKOYZGAMYRSRKIGTDLVPLGALDQPDBIR
KYGSFI IQCYMPDYYASQLFLSRAPTRIGILGIGSYSFKLGDDWRWHBYLLPVI
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leCysSerIleGlyThrTyzAzgPheArgicuGlyGlyAspIrpTyr 418 	BASE COUNT 1621 a 43	KIGSTIANTERSTRANDEN SANTTANGALDSIGSTSFALGULVERSELLEVI KIRKSLILESTRANDEN SANTTANGALDSIGSTSFALGULVERSELLEVI KIRKSSILESTRANDEN SANTTANGALDSIGSTSFALGULVERSELLEVI
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	US-09-910-186A-10 (1-450) x CLOTNCO (1-4049)	CLOTNCO (1-4049)
1404 bp DNA linear BCT 18-DEC-2001 Lium botulinum type D gene for neurotoxin consisting of mm neurotoxin D and Cl. complete cds.	Oy 2 ThrileProPheAsnII 	2 ThrileProPheAsnilePheSerTyrThrasnAsnAsnSerLeuLeuLysAspileIleAsn 21
G::374775 in consisting of botulinum neurotoxin D and Cl; neurotoxin. Flum botulinum D (strain:South African) DRA.	Oy 22 GluTyrPheAsnAsnil 	22 GlutyrPhokanksnileAgnakpSertysileLeuSerteuGlnAsakrgLysAsaffkr 41 [
indi Doutrinam D'Ostridia; Clostridiales; Clostridiaceae; 1 Firm. Coutes; Clostridia; Clostridiales; Clostridiaceae;	Qy 42 LeuvalaspthrSerGlyfyrAsnalaGluVal 	LeuvalAspThrSerGlyTytyAsnAlaGluvalSerGluGluGlyAspValGlnLeuAsn 61
The Noulain, Nuc. N., Fujil. N., Fujil. Noulain. And entructures of neurotoxiloss produced from Clostildium in types C and D organisms	Qy 62 ProllePheProPheAs 	ProllePheproPheAspPheLyslewGlySerSerGlyGlwAspArgGlyLysVallie 81
Exceptys. Acta 1307 (4), 143-140 (1990) R 104049)	Oy 82 ValThrGloAsnGluAs	ValthrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe 101
Ubmrission (4) (29-29-194) Kohli Moriishi, Osaka University, Research e for Mirrobla Disasses Research Center for Emerging Suse Diseases; 3-1, Yamadaoka, Sulta, Osaka 565-0871, Japan	102	TEPLEARTIEASELYSTRVAlGERSELGUFFOCLYYTHTIEILEASPGEVAL 121 TGSMTHGARTAANTAGRAF
conjightken.coaka.u.ac.jp, Tel:81-6-6879-8343, 1-6879-8250; Doaldon Tel:81-6-6879-8343, 104040/Qualifiers	Cy 122 LyshsnasnSerGlyTz 	122 LyaksnAsnSerdlyTrpSerlleGlyllellsSerNanPhaleuvalPhaThalus 141
//Organismm=Chostidium hotulinum P* //strain=South Agricon* //strain=South Agricon* //strain=South Agricon* //strain=South Agricon* //strain=South Agricon*	Oy 142 GlnAsnGluAspSerGl 	GInAsnGluNspSerCluGluGSerTleAsnPheSerTyrAspTleSerNsahAsnAbPro 161
Codom_estatt=1. /transl_Lable=1. /transl_Lable=1. product_freurotoxin consisting of botulinum neurotoxin D and Cl"	Oy 162 GlyTyrAsnLysTrpPP 	GlytykanlystyphephevalthtvalthtkanashethetGlykanketlysile 181 GGARTAKANGTTTTTTTTTTTTTTTTTTCARTACARTAGGARTAGGARTAGATTTTTTTTTT
/procedin_id="hab/0747";" /db_xere="di:1374776" /db_xere="di:13747	Qy 182 TyrileAsnGlyLysle	TyrileksnG:ylysteulleksprhrilelysvallysGludeuThrGlylleksnPhe 201
GRALINELVOLGERPROGSSEPENDEN FORTHWATERENSKYNTITEPOL PLANLINELAGIOSEPENS FOR THE STORT STANDARD STANDAR	Oy 202 SerLysThrileThrPP 	202 SeriyathrileThrPhaGluilaAaniyeIleProAapthrGlyLeuileThrSerAsp 221
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Institute for Microbial Diseases, Research Center for Emerging
Infectious Diseases; 3-1, Yammadoka, Sulta, Osaka 565-0871, Japan
[E-mail:kchjidbikes.osaka-u.ac.jp, 7e1:81-6-6879-8343,
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Clostridium betulinum Periodium (Clostridiales) Clostridiaceae)
Betetaris Firmicutes, Clostridia; Clostridiales, Clostridiaceae
                   3577 AATGAAGGATATAAAAATTATAAAAAAGAATTAGAGGAAATACAAAAGGAATACAAAAGGATA 3636
                                                                                                                                                                                                                                                                                                                         3742 GGTGCATTGGATGCAATGGATGGATACGTAATATGGTTCGTTTATAATACAACCA 3801
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                                                                                                                                           322 ArgGlyGlyAspileLeuTyrPhaAspMctThrileAsnAsnLysAlaTyrAsnLeuPhe 341
                                                                                                                                                                                                                    342 MetLysAssGluThrMetTyrAlaAspAssHisSerThr --- GluAspIleTyrAlaile 360
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282 TyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAsnAspPhe
                                                                         302 AsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgVal
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KRYRGHPLKFDFEYIINDNYIDRIZAPKRILUVQYPDRGKLYTGNPITIKSVSI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESSGEVAVDRIKFAELYKELFOIFTERNYAKIYINVÖRKIYLSINYTPYTANILDDIN
YDLQNEN PRYSKILKULFARONILSINSPALKAVIRANILLERKIYLERSINSEYNIK
LIORELLYKNDD-PFIGFOR TOTTOFISKULDEN TOTTOFISKULDEN
HGQLDLLYPIIBSEQVILPGENQVFYDNRTQNVDFIANSYYYLESQKILSDINUEDFFFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIBEALDNSGKVYTYFPKLADKVNFGVOGGLFLMMANDVVEDFTHILRKDTLDKISD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RNEITKTIDMCLEORIKRHKDSYEHMIGTWLSRITTOFNNISYOMYDSLNYOADAIKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KIDLEYKKY SGSDKENIKSQVENLKNSLDIKI SEAMMININFIRDSSYTYLENKLYRYN VIDELNKFDLKTRIELINLIDSHNIILVGEVDRLKAKVNESFENIFIRISE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LKDIINEYFNSINDSKILSLONKKNALVDTSGYNAEVRLEGDVQVNTIYTNDFKLSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GDKIIVNINNILLYSAIYENŠSVSFWIKISKDLTUSHNEYTIINSIKQNSGWKLCIRN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VSAIIPYIGPALNISNSVRRENFTEAFAVTGVTILLEAPQEFTIPALGAPVIYSKVQE
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Best Local Similarity:		Mismatches:	
Query Match:	36.91%	Indels:	27
DB:		Gaps:	
US-09-910-186A-10 (1-450) x CLOBN (1-4043)	0) x CLOBN (1-4043)	

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2792 TEACHGGATACATCAGGARATAATGCAGAAGTGAGGCTAGAAGGTGATGTTCAAGTTAAT 2851 42 LeuvalAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn

3083 CAAGATATTAATAGAAAGTATAAAAGTTTAATTTTTGATTATAGTGAATCATTAAGTCAT 3142

161 ProGlyTyr---AsnLySTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMet 179

TOURNAL REPERENCE AUTHORS JOURNAL

TITLE

Source

FEATURES

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18 78 38 86 28 18 75

CDS

6	3143	ACAGGATATACAAATAAATGGTTTTTTGTTACTATAACIAATAATAATAATGGGGTATATG	33
õ	180	LysitaTyrileAsnGlyLysLeulleAspThrileLysValLysGluLeuThrGlyile	19
g	3203	ataaatggagaattaaagcagagtgaaagaattgaagatttaaatgagg	326
οy	200	AssPheSerlysThrIleThrPheGluIleAssLysIleProAspThrGl	210
q	3263	AAAACCATAGTATTGGAATAGATGAGAALATAGAI	33(
δõ	220	SerAspSerAspAsnIleAsnMatTrpIleArgAspPheTyrIlePheAlaLysGluLe	23
g	3308	GAGAATCAGATGCTTTGGATTAGAGTTTTAATATTTTTTTT	33
δλ	240		25
C	3359	4	34.
φ	260	TyrTrpGlyAsoAspLeuArgTyrAsoLysGluTyrTyrMetValAsoIleAspTyrLeu	275
æ	3419	- [←	34
di i	280	AssArgTyrMetTyrAlaAssSerArgGlnIleValPh	53
ffc	3479		33
m	300		315
1	3539	AAAFTATATACTGGAAATCCTATFACTATFAAATCAGTATCTGAIAAGAAICCTTAIAGT	35
Œ	320		33
14	3599	AGAATITTAAATGGAGATAATATAATGTTTCATATGTTATAATAATATATGT	36
091	340		35
86	3659		37.1
jàc	357	IleTyrAlalleGlyLeuArgGluGlnThrLysAspIleAsnAspAsnIlellePheGln	376
Â	3719		37
0	377	11eGlnProMetAsnAsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsn	396
5 4	3776	ATABABATATTGTATCTCABABTAATAT	38
05	397	GlyGluAsnileSerGlyIleCysSerIleGlyThrTyrArgPheArgLeuGlyGly	4
22	3833	ATAMACCITGGAGATTTTCITTT	388
0	416	æ	43
)% 4	3884	GAAAATGCATACACGCCAGTTGCAGTAACIAATTAIGAGACAAAA	39
ð	436	LeuGluserThrHisTrpGlyPheVal 446	

Acoustic bouling games for ORE-72, HA-70. HA-17, HA-34, KYKBAA, MADIAC, compilee cds. BCT 21-JAN-2000 3929 CTATTATCAACTTCATCTTTTTTGGAAATTTATT 3961 DEFINITION ACCESSION AB037166 LOCUS RESULT 11 VERSION

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83

CDS

Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae; Sagane, Y., Watanabe, T., Kouguchi, H., Yamamoto, T., Kawabe, T., Murakami, P., Nakatsuka, M. and Ohyama, T. AB037166.1 GI:6729207
neurotoxin, WINNA; HA-33; HA-17; HA-70; ORF-22.
Clostridium botulinum (strain:C-6814) DNA.
Clostridium botulinum (bases 1 to 11614) Clostridium. ORGANISM KEYWORDS RFERENCE

GOLD SECRETARY TO GATE STREAM THE TWO SERVES THE SECRETARY SECRETA Hokkaido /translation-"mnolpyaibnikhdnohphpibasikkiibkyskkyniyddyy Pollyhhawsilebhikkyspeldikaysysikky-inckkinkwstyskedyytk Kloavynysilvohppelalisilakyskoliyakppelebhobsikkhiiskosiy /db_xref="G1:6729209" /translation="MSLSIKBLYYAKDKSINNVMLADGNYVVNRGDGWILSRQNQNLG /translation="mssertPlpNgNyKIKSlFSNSLYL7FSSGALSFSNJDNGK WKLEYISSSNGFRFSNVAESNKYLAYNDYGFIYLSSSSNNSLMYPIKIAINSYIICTL TETATE A LIGHT "MSGTNANDLRNNEVFFISPSNSTNKVLDKISOSEVKLMSKNIGS NGKWRLIYDTNKGAYKIKVMDNTSLILTWDAPLSSVSVKTDTNTNNOYWYLLDDYISR Programation of compacting the Bottlinum Programs of the Bottlinum Programs of Charles Sequence in the General Sist, Profits in Clostfidum Propertor of the Bottlinum Programs of Chinace of Chinace Sequence in the Gene Encoding Bach Component Published Only in Debashees (2000)

Debase 1 to 1814; Rougest, N. Tenmento, T. Kavabe, T., Wardener J., Martener M. Maktoner M. Machana M. Mach Submitted (17-3NN-2000) Tohru Ohyama, Tokyo University of Sartoniurue, Recity Of Bioinduleriy Yasak 196, Abshiri, 1095-489, Japan Ermalir-oyama Bioindusrry, nodal ac. 1967-489, Japan Ermalir-oyama Bioindusrry, nodal ac. 1967-1881-185-486-1886 (ac. 185), Fax:181-182-48-2940) SIVNVIDYAWIIYDNNNITDQPILNLPNFDINNSNQILKLEKL" /organism="Clostridium botulinum" /strain="C-6814" /db_xref="taxon:1491" /protein_id="BAA89708.1" /db_xref="G1:6729208" /transl_table=11 /product="HA-17" /protein_id="BAA89710.1" /db_xref="GI:6729210" IRIKSLKKLYPIVMQLVNI" COMplement(633. .2504) 'gene" Ma-70" COMplement(633. .2504) /gene" Ma-70" /protein_id-"BAA89709.1" /protein_id="BAA89711.1" /db_xref="GI:6729211" complement(2518. .2958) /gene="ha-17" complement(2518. .2958) /gene="ha-17" complement(3020. .3880) /gene="ha-33" complement(3020. .3880) /codon_start-1 /codon_start-1 /transl_table-11 /product-"HA-70" /transl_table-11 /product="HA-33" /gene="orf-22" 18. .557 /gene="orf-22" /codon_start=1 /codon_start=1 /gene="ha-33"

10276 ACAATACCCFFTAATAFFFFTCATAFACTAATAATFCFFTAFTAAAAGATATAATTAAT 10335

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CDS

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ThrileProPheAsnIlePheSerTyrThrAsnAsnSerLeuLeuLysAspIleIleAsn

US-09-910-186A-10 (1-450) x AB037166 Best Local Similarity: 43.90% Query Match: 35.91% Query Match: DB:

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4

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42

10396

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62 ProllePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile 81

		gene	CDS	
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NSYTEKIEDRINGSILLAGA PREPUSCHOMERALSYNGLILERTROPNSHIEDISGK
NILLOYTESVELIVVQYNGSSILLAGA BREPUSFSYNGLIRHFILGFALREFORKD
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                                                                                                                         DRFLSKNLNSQITULMOWFDSSROKHLLEYNETKSATLLKCOENNRYLTMIQNSNNYV
ETYGSTDSLIQYMLINYLDNDASKYILXNLQDTNRVLDVYNSQIANGTNVIVDSYHGN
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STATEPPYSYGGISSBULTFGKTRKSNKLNSLYPTTEPPROTTFRFYDSP
STOFYAANTYTEPGSSRIPERNYLCYKKNDARNSGTRAELLSODLLTWRYKEYIDD
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LICMAKQSILAQESLVKQIIQNKFTDLSKASIPPDTLKLIKETTEXTFIDLSKESQIS
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on 05-05

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11203 AGAATTTTAAATGGAGATAATATAATGTTTCATATGTTATATAATAGTGGGAAATATATG 11262

Length: Matches: Conservative:

2.61e-50 882.50 61.20%

Percent Similarity: Alignment Scores:

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1240 c

4499

SASE COUNT Š

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141

10687

10626

140 160 10866

10962

239

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/TPRRFSSDTNPSLSKPPRPTSKYOSYYDPSYLSTDEOKDTFLKGIIKLFKRINERDI
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Pred. No.:
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Kozaki, S., Kriegistein, P., Henschlen, A., Gill, D. M. and Mismann, H.
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62 ProllePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysVaille 81

LysileTyrileAsnSlyLysLeuileAspThrileLysValLysCluLeuThrGlyIle 199 Page 19

GenBank staff at the National Library of Medicine created this entry (NUBI gibbea 11863) from the original journal article. This sequence comes from Fig. 4. Location/Qualiflers

/organism="Bacteriophage d-16 phi" /db_xref="taxon:12409" /note="type: D"

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REMARK FRATURES /gene="type D neurotoxin" /gene="type D neurotoxin" /note="Method: conceptual

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3092 aaactttatataaatggagaattaaagcagagtcaaaaaattgaagatttagatgaggtt 3151
                                                                         1152 AAGTTAGATAAAACCATAGTATTTGGAATAGATGAGAATATAGATATATAGAT
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                                    200 AsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThrGlyLeuIleThr 219
                                                                                                                                                                                          240 AspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsnValValLysAsp 259
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KTTENCLEGOVKRWIGS VOMPVSWILSRTTTGENEINYONDSLESYOLDALKATDL BYKKTGGSKENKESOPWELKNSLUWFLESAMBNINKETRESCYTTERMALKOL BKRYDLEKTSELINLIDGENIILVOSHWILLVOL

DNIGNEVVNIDRENSLYSDLINVMSEVVYSSQYNVKNRTHYRSRHYLPVFANILDDNI ALGYSNK IYTFLPSLAEKVNKGYGAGLFLNMANEVVEDFITNLMKKDTLDKISDVSVI IPYIGPALNIGNSALRGNFKGAFATAGVAFLLEGFPEFITEPALGVFTFYSSIQEREKI

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/product-"type D neurotoxin"

/codon_start-1

INEYFNS INDSKILSLANKKRALVDISCYNAEVRYCDAYGLATTYNDR LESCORT ITVALANKLISCA ITYNSSYSKERKKISKOLTYSKIRETYTINSIDONSCHKLCIRKONIE RILODYNKYKSLIFUNSYSSELJEHOYTYKREYTITNYINGYRKLITNGELGOSOKIE DLDEVKLDKT IVRGIDENIDENQML#IRDFNIFSKELSNEDINIVYEGGILRNVIKDY WONDLKEDTEYY I NONYIDRY I APESNYLYLYRY DBEKLYTGHP ITT KYNOKNYP SRILNGDNI I LAMLYNSRYHI TRUTOTI YATQQEC SQNCYYALKLQSNLGNYGTGI BINNYSKIKYCSQI PSSFRENTHILADIYKEMRESENNAYTEVAVINYEFKLLGTS 2)56 GRATATITCAATAGIATITAATGATCAAAATITITGAGCITACAAAAGAAAAAATGT 2815 2876 ACGATATATACAAATGACTITAAATTAAGTAGTTCAGGAGAT-----AAAATTATA 2926 2927 GTBARTTERARTANTANTATTTTATATAGGGCTATTTATGAGAACTCTAGTGTTAGTTTT 2986 82 ValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe 101 4 2 ThrileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspileIleAsn 21 62 ProllePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile 81 22 GluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThr 4087 1195 83 1146 111 Length: Matches: Conservative: Mismatches: Indels: 633 g 1395 t US-09-910-186A-10 (1-450) x S49407 (1-4087) 9.56e-50 867.50 61.64% 43.24% 36.28% Percent Similarity: Best Local Similarity: 1646 Alignment Scores: Query Match: DB: BASE COUNT ORIGIN Pred. No.: Score: 8 60 à a ð 8 ò g à

type D neurotoxia (beneficibles of play, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, psyston, 015,000 of 15 pli, host - c. botilinus, 015,000 o

DEFINITION

ACCESSION

CEYWORDS ZERS LON

RESULT 13

3818 CTATTATCAACTTCATCTTTTGGAAATTTATT 3850

Bacteriophage d-16 phi CB16 host - C. botulinum. Bacteriophage d-16 phi

/iruses.

ORGANISM

AUTHORS

REPERENCE

93042276

MEDLINE PUBMED JOURNAL

1. (Gaser 1 to 4087).

Managawa H. Obyean T. Watnache, T. and frome K.
The complete main or adj estumene of the Clostifdium betulinum type
Districtorin, deblaced by moleculed sequence analysis of the
encoding phase d-15 pli secone
T. Ver. Ned. Set. 15 (5), 005-511 (1992)

RESULT 14

AB012112 Clostridium botulinum	NIX, complete and par AB012112 AB012112.1 GI:457973 NEX; NINH; EA1; HA2;	Clostridium botulium Viruses. 1 (sites)	Nakajima, H., Indue, K. Takeshi, K., Ohyama, T. Wolecular composition botulinum type D stra	Microbiol Immunol. 9 99017846 2 (bases 1 to 11584) Inoue, K., Ohyama, T.	Submitted (11-MAR-195 School, Department of Okayama 700-8558, Jap	Location/Que	/db_xref="tr 28567 /gene="orf-;	/gene"orf- /codon_star/ /transl_tab	/protein_id /db_xref="G" /trenslation /trenslation	KIDAVNYSIYO IRIDAVNYSIYO IRIDAVNYSIYO COMPLEMENT()	complement() /gene="ha3" /gene="ha3" /transl teh	/product="H /produ	CLIMICAL GNISNGCTAI FSKTAPSNKSL KNFYFTSQDKC KNFYFTSQDKC	AFNIQLFWIST GKCEVEDAPSP GKCEVEDAPSP NIPPSIQNNAC	VALIDALINES VALIDALINES RLTESINGINE COMPLEMENT (AGREENT)	complement() /gene="ha2"	/product-18 /product-18 /product-19 /product-19 /product-19	
RESULT 14 AB012112 LOCUS DEFINITION	ACCESSION VERSION KEYWORDS	*		ABDLINE REFERENCE AUTHORS		FEATURES	eueb	800		gene	CDS				gene	SOD		
TIPLIBATGILBASDLYSTIPVALSETASDLEUPFOGLYTYTHILITLETBASPSET 120	ValuysAsnAsnSarciyTrpSerIleGlyILeIleSerAsnPheLeuValPheThrieu 140	LysGlnAsnGluAspSerGluGlnSerllaAsnPheSerlyrAspIlaSerAsnAsnAla 160 CANGARGTTAATAGAAGTTAAAAGTTTTAATTTTAATAAAGTGAATAAGTCATAAGTCATAAGTGAAGTAAAGTTTAATTTTTAATAAAGTGAAAGTAATAA	161 Prodlytyr Asalysfryphaphavalthrvalthrksnamkerketdlyasnaet 179	180 LystleyyileksnGlyLysteullekspThrileLysValLysGluteuThrGlyIte 199 	200 AsnDheSeriyaThrilleThrDheSlulleAsnIyaTleProAspThrClyLeulleThr 219 2287 AAGTIAGAHAAACCHRGTATTIGGAMTAARGAGAATAAGAT 3331	SerAspSerAspAenIleAsmAetTrpIleAtgAspPheTyrIlePheAlaLysGluLeu 239	240 AspdlytysAsplieAssileLeubheAssSerLeuGinTyrThrAssValvalLysAsp 259 1383 ACTAATGAAGHATTAATATTATATGAGGACAAATATTAAGAATGTTATTAAAGA	260 TyrTrpGlykanksplaukrgTyrkanLysgluTyrTyrNetValAsnIlakspTyrLeu 279	280 AsaArgTyTMetTyTAlaAsaSerArgGlatleValPheAsaThtArgArgAsaAsaAsa 299 48.0 Abrill Hill 48.0 Abrill ArgacaCorgaAAGTAATGTAATGTAATTGTAATGTAATGTAATGTAAT	300 AspPheAsnGluGlyTyrLysllallelleLyakrglleArgGlyAsnThrAsnAspThr 319 3563 AAATTATAIRCTGGAAATCCIFTRCTATTANATCAGATCGGATCGGATCGGATGGTGTTATA	320 ArgValargGlyGlyAspileLeuTyrPheAspMerthrileAsnAsnLysAlaTyrAsn 339	340 LeiphaMetLyskanGluthrMetTyralakspasikisseithrGluasp 356 iiitharakokatharakokatharakokatharakokanGganGanGanGanGanGanGanGanGanGanGanGanGanGa	IletyralailegiyLeuargoluglarhriysaapileasanaspasaileilephegla 376 	IleGlaprowetAsnAsnTurTyrTyrAlaSerGlallePhaLysSarAsnPheAsn 396	GlyGluAsnilsserdlyileCysSerileGlyThrTyrargPheArgleuGlyGly 415	416 AspriptyrArgHiskenfyrLeuValProThrValLysGlnGlyAsnfyrAlaSerLeu 435 905TTRANANIGGRARAGGCGAGTYGGAGTAGTANTTRIAAAGAAAAA	436 Leudluserihirsarthriksartydlypheval 446 3953 Crhwithachactrchrityddaanthrii 3985	
Oy 102 Trp	Qy 121 Vall	Oy 141 Lyse 11: 0b 3107 CAA		180 Lys 3227 AAN		3332	240 Asp 3383 AGT					340 Leu	357	Oy 377 Ile	Oy 397 GLy Db 3857	Oy 416 Asp Db 3905	Oy 436 Leu Db , 3953 CTA	
J A	Ja	J D	5 4	COB	euri	MIG	LUĐ	101	00 0	כטיזו	-03-	-zuu	11000					

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LEIDLIKKEN PREICHAKT STSTERKYC I HOKKKANSKKI LYSSEYTYK
VYCODRFEELDLASTARKOLITYMK SPEGRKONETA IHLBLEROSITY
FFYDOLVITI d="Bar75081.1" GI:4579735" on="MSSERTFLPNGNYKIKSLESDSLXLLYSSGALSFPNTSSLDNOX 11584 bp DNA linear PHG 16-FEB-1999 um D phage gene for ORF-22, HA3, HA2, HA1, NTNH, artial sequence. K., Ikeda.T., Fujinaga.Y., Sunagawa.H., T., Watanabe.T., Inoue.K. and Oguma.K. on of the 16S toxin produced by a Clostridium rain, 1873 998) Kaoru Inoue, Okayama University Medical of Enteriology; 2.5-1 Shikatu-cho, Okayama, apan (E-mail.ostu@med.okayama-u.ac.jp, Exx:81-86-235-7162) "Clostridium botulinum D phage" 873" um D phage (strain:1873) DNA. um D phage 42 (9), 599-605 (1998) . HA3: ORF-22. and Ikeda, T. 2527. .2967) (642. .2513) taxon:29342* (642. .2513) alifiers -22* -22 7

complement(3030. .3905)

e-"hal"

WELEYTSSSNOFRESINAREPRYTAVOURCETYLSSSNOSLAMPIKTAINGYIICTL STVWYDYAMTIYDINNITOOPILINEPREDINGSNOILKLERL SCOMPLEMENT (3030 - . 3905)

4153. .7743 /gene="ntnh" 4153. .7743

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>11584 'dene-"ntx" 758. 758

CDS

/transl_table-11 'gene="ntx"

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WILQDVNRKYKSLIFDYSESLSHTGYTNKWFFVTITNNIMGYMKLYINGELKOSOKIE DLDEVKLÖKTIVFGIDENIDENQMINIRDFNIFSKELSNEDINIVFEGGILRNVIKDY MGNPLKFDTRYTINDNYIDBYIAPESNULVLYQYPDRSKLYTGNPITIKSVSDKNPY SKILMODATILMALVGRYRYBYIROTDTYTAPGGGGSOROVYALKALGOSULGYRANGS SSIKULVSKIRYGGGISSSPROWYLLADIYKPRFSSRNAYPYDYYSTKLAST

		Ü,	SEWKFISRDPGWV*	VWDGC							
BASE COUNT ORIGIN	4511		1227 c 163	9	1612	D 1	4234 t	ų.			
Aliqument Scores:											
Pred. No.:			2.68e-	64-		Len	Length:		=	584	
Score:			867.50	_		Mat	Matches:		5	m	
Percent Similar	LEV:		61.64%	_		Con	Serva	tive:			
Best Local Simi.	lari		43.244	_		Mås	match	: 591		9	
Query Match:			36.28%	_		H	els:	Indels:	27		
DB:			~			Gaps:			=		

2 InrilepropheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspileIleAsn 21

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US-09-910-186A-10 (1-450) x AB012112 (1-11584)

KLSGANGKRELTEDTRIQAKTKYNDNYSZLLIPNARZESSYSWETDYNGDNGYRYLLG WY ISTANICTRYNSKHULLGYNDTDILAKTSOSSASOFKER SKETTRALASKREKIG TOLSIOSFILSKILKOGI VLAMPIDSSKOWILIETNETSKRYTKOGNSKELTRYDI SINYTETTGOGLIGY WILLIALDASKYLLIKHIGOTSKYLDYTKSGILNAFTFYTD

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TGGATTAAGATATCTAAAGATTTAACTAATTCTCATAATGAATATACAATAATTAACAGT 10622 TrbileArglieAsnLysTrpValSerAsnLeuProGly --- TyrThrIleIleAspSer 120 VallysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuvalPheThrLeu 140 102 10563

10623 ATAGAACAAAATTCTGGGTGGAAATTATGTATTAGGAATGGCAATATAGAATGGATTTTA 10682 141 LysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSerAsnAsnAla

----GAGAATCAGATGCTTTGGATTAGAGATTTTAATATTTTTTCTAAAGAATTA 240 AspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsnValValLysAsp 10908

10959 ACTANTGARGATATTANATATTGTATATGAGGGACAAATATTAAGAAATGTTATTAAAGAT 11018 TyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIleAspTyrLeu 279 8 ð

22

I LEEGFNISDKNMEKETRGONKAINKOAYEEISKEHLAVYKIOMCKSVKAPGICIDVD NEDLFFIADKNSFSDDLSKNERIAYNTONNYIENDFSINELILDTDLISKIELPSENT BSLTDFNYYVDVYKKQPAIKKIFTDENTIFQYLXSQTFPLDIRDISLTSSFDDALLFS PSIISPSTDKSIYDKVLQNFRGIVDRLMKVLVCISDPNININIYKNKFKDKYKFVEDS BGKYSIDVESFDKLYKSLMFGFIETWIABNYKIKTRASYFSDSLPPVKIKNLLDNEIY

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SINTLAYINKEYYMFNAGIKNSYIKLKKDSSVGEILLTRSKYNQNSKYINYRDLYIGEKFI

1282 t Length: Matches:

616 9

367 ℃

1611 a

NKVYSFFSMDYIKTANKVVEAGLFAGWVKQIVNDFVIEANKSSTMDKIADISLIVPY. SEKERSNINIDENDVNSKINEGINOAIDNINNFINECSVSYLMKKMIPLAVEKLIDE

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BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment.
11019 TATTGGGGAAATCCTTTGAAGTTTGATACAGAATATTATATTATTAATGATAATTATATA 11078
                                                                 11139 AAATTATATACTGGAAATCCTATTACTATTAAATCAGTATCTGATAAGAATCCTTATAGT 11198
                                                                                                                                                                                                    11199 AGAATTTTAAATGGAGATAATBTAATTCTTCATATGTTATATAATAGTAGGAAATATATG 11258
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                                                                                                                                                                                                                                                                                                                                          11319 GTATATGCATTAAAATTACAGAGTAATTTAGGTAATTATGGTATAGGT---ATATTTAGT 11375
                                                                                                                                                                                                                                                                                                                                                                                                 11376 BIAAAAARITGTAFCTAAAAATAAATATGTAGTCAAATTTTC---TCTAGTTTTAGG 11432
                                                                                                                                                                   320 ArgvalArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsn 339
                                                                                                                                                                                                                                                                                                          357 IleTyrAlaIleGlyLeuArgGluGlnThrLysAspIleAsnAspAsnIleIlePheGln 376
                                                                                                                                                                                                                                                                                                                                                                                                                                             397 GlyGluAsnIleSerGlyIleCysSerIle---GlyThrTyrArgPheArgLeuGlyGly 415
                                280 AsnArgTyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsn 299
                                                                                                  AspPheAsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThr 319
                                                                                                                                                                                                                                        340 LeuPheMetLysAsnGluThrMetTyrAlaAspAsnHis-----SerThrGluAsp 356
                                                                                                                                                                                                                                                                                                                                                                           377 IleGlnProMetAsnAsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsn 396
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AP300465 3876 bp DNA linear BCT 08-CCT-2001 Clostridium botulinum isolate 588 type B cryptic neurotoxin gene, AF300465.1 GI:15982936 complete cds.

JS-09-910-186A-10 (1-450) x AF300465 (1-3876)

3876 1168 84 154 20

Conservative: Mismatches: Indels:

610.00 50.81% 33.87% 25.51%

Similarity:

Query Match:

Percent Similarity: Scores:

416 AspTrpTyrArgHisAsnTyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeu 435

> a ò ò

62 ProllepheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile 81 42 LeuvalAspIhrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn 2623 TTANTAGATTTATCAGGATATGGGGCAAAGGTAGAGGTATATGATGGGGTCAAGCTTAAT

82 ValThrGinAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe 101

102 TrplleArglleAsnLysTrp-----ValSerAsnLeu----ProGlyTyr 115

q

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Clostridium botulinum.
Sotostridium botulinum satorstridias; Clostridiaceae;
Sotostridium botulinum
                                                                                                                    Clostridium botulinum
                                                                                                                                                                                                                                Submitted (28-AUG-2000) Department of Biology, Georgia State University, P.O. Box 4010, Atlanta, GA 30302-4010, USA
                                                                          [ (bases 1 to 3876)]. And Baumstark, B.R. Characterization of six type A strains of that contain type B toxin gene sequences
                                                                                                                                                                      2 (bases I to 3876)
Kirma, N., Ferreira, J. L. and Baumstark, B.R.
                                                                                                                                                                                                                    Direct Submission
                                                          Clostridium.
                                                                                                                                                     Unpublished
                                                          2004
                                                                                                                                                                      REFERENCE
                                                                                                                                                          FOURNAL
                                                                                                                                                                                                                                     TOURNAL
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2791 TGGATAAGAATACCTAAATATAAGAATGATGGTATACAAANTTATATTCATAATGAATAT 2850
                                                                                                       2851 ACANTANTTANTGINICAAAAATANTCIGGAIGGAAAATATCITGGGGGTANTAGGGGTANTAG 2910
                                                                                                                                                                                                              1911 ATANTATIGACTITAATTGATATAAATGGAAAAATCAAATCAGTATTTTTTGAATATAGC 2970
                                             116 ThribelbeaspSerValLysAsnAsnSerClyTrpSerlleGlylleIleSerAsnPhe 135
                                                                                                                                                                                                                                                                 156 IleSerAsnAsnAlaProGlyTyr---AsnLysTrpPhePheValThrValThrAsnAsn 174
                                                                                                                                                          136 IeuvalPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAsp 155
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                                                   .3876
                                                                                                                                                                                                                                                3876
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CDS

PRATURES

8 09:39:18 2002

Fri Nov

Search completed: November 7, 2002, 18:38:07 Job time : 2772 secs

3778 AGTAANTGGTAC-----TTAAAAGAGGTAAAAGGAAACCATATACA 3822

SUMMARIES

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BONT/A neurotoxin
C botulinum BONT/E
Clostridium botuli
Clostridium botuli
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Immunogenic type F
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Type D BoNT non-to
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terminal fragment; Verseuclan equine encephalitis virus replicon;
VEE; botulism, vaccine; diagnosis; drug soreening; ds.
                                                                 Description
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AAV30591
AAZ87215
AAA54488
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AAP58862
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Synthetic.
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Listing first 62 summaries

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and is derived by analysis of the total score distribution.
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GenCore version 5.1.3
Copyright (c) 1993 - 2002 Compugen Ltd.
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The invention relates to consider with cludes a processive and an emphasis against both the processive and an emphasis against both the processive and the processive
                                                              /tag- a /product- "synthetic botulinum neurotoxin serotype C (BONTC) heavy chain C-terminal fragment (Hc)*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Smith L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lee JS, Pushko P, Smith JF, Parker M, Dertzbaugh MT,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 41-42; 54pp; English.
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P-PSDB; NAY77136.
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Sequence 1371 BP; 397 A; 416 C; 265 G; 293 T; 0 other;

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70 AACGAGTACTTCAACAACATCAACGACTCCAAGATCCTGTCCTGCAGAACCGTAAGAAC 129 21 AsnGluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsn 40 a ö 8

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ACCTIGGTOGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCCAGCTG ThreevalaspinserglyTyrashlagluValSergluGluGlyAspValGlnLeu 60 130

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100 81 IleValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSer

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369 0 4 7 429 141 LysGlnAsnGluAspSerGluGlnSerlleAsnPheSerTyrAspIleSerAsnAsnAla 160 430 AAGGAGAACGAGGACTCCGAGCAGTCAACTTCTCCTACGACATCTCCAACAACGC 489 Š ö 윤

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490 CCTGCTTACAACAAGTGGTTCTTCGTCACGTCACCAACAACATGATGGTAACATGAAG 549 161 ProGlyTyrAsnLySTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMetLys ŏ 융

610 TICICCARGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGGTCTGATCACGTCC 669 301 PheSerLysThrIleThrPheGluIleAsnLysIleProAspThrGlyLeuIleThrSer 220 용 ŏ 윱

221 AspSerAspAsoIleAsnMetTrpIleArgAspPheTyrIlePheAlaLysGluLeuAsp 240 ð g ö

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261 TrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIleAspTyrLeuAsn 190 TGGGGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATGGACTACATGAAC g a à

281 ArgTyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAshAsp 350 AGATACATOTACGCCAACTCCAGACAGATCTTCAACACCAGACGTAACAACAACGAC ò g ö

606

910 GTCAGAGGTGGTGACATCCTGTACTTCGACATCAACAACAACAAGGCCTACAACCTG 1029 301 PhehsnGluGlyTyrLyslleIlellelleSArglleArgGlyAsnThrAsnAspThrArg 221 ValargGlyGlyAspileLeuTyrPheAspMetThrileAsnAsnLysAlaTyrAsbLeu 910 TICAACGAGGGITACAAGATCATCATCAACGIATCAGAGGTAACACCAACGACACCAGA

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341 PheMetLysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIle 360 ä 윱 à 윰

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381 AsnAsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIle 400 401 SerGlyIleCysSerIleGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHis 420 ð a ö

421 AsnTyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSer 440 â

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121 ValLysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuValPheThrLeu 140
                                                                                                                                                                                                                                                            1 MetThrIleProPheAsnIlePheSerTyrThrAsnAsnSerLeuLeuLysAspIleIle 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81 IleValThrGlaAsnGluAsnIleValTyzAsnSerMetTyrGluSerPheSerIleSer
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              161 ProClyTyrAsnLysTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMetLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 IleTyrileAsnGlyLysLeuileAspThrileLysValLysGluLeuThrGlyIleAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TICTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGGTCTGATCACCTCC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    261 TrpGlyAshAspLeuArgTyrAshLysGluTyrTyrMetValAshIleAspTyrLeuAsh
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                                                                                                                                                                                                                                                                                                                       Botulism toxin heavy chain C-terminal coding sequence (serotype C).
                                                                                                                                                                                                                                                                                                                                                               Botulism; toxin; neurotoxin; heavy chain; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium;
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/*tag= a
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                                                                                                       1330 ACCCACTGGGGATTCGTCCCAGTCTCCGAG 1359
                                                                   441 ThrHisTrpGlyPheValProValSerGlu 450
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10..1362
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infection; ds.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clostridium botulinum,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-016048/02.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB: AABO4092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       W0200067700-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12-MAY-1999,
12-MAY-1999,
12-MAY-1999,
12-MAY-1999,
12-MAY-1999,
12-MAY-1999,
29-JUL-1999,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-NCV-2000.
                                                                                                                                                                                                                                     AAA54486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic
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301 PheAsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArg 320

129 189 24.9 100 309 120 369

9 80

69

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242 LysaspileAsnileLeuPheAsnSerLeuGlnTyrThrAsnValValLysAspTyrTrp 261
                                                                                                                                                                       Local Similarity:
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Query Match:
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                                                                                                     421 AantyrieuValProThrValLysGlnGlyAsnfyrAlaSerieuLeuGluSerThrSer 440
1270 AbGTAGTRGGTRGAALTGTRAAGGGTAAGTAGTRGGTGAATTGC 1329
                                     970 GTCAGAGGIGGIGACATCCIGIACITCGACATGACAACAACAAGAGGGCGTACAGCTG
                                                                                  1089
                                                                                                                                                    AACAACACTTACTACTACTACCTTCCCAGATCTTCAAGTCCAACTTCAACGGTGAGGAGATTC 1209
                                                                                                                                                                                            341 PheMetlysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaile 360
                                                                                                                                          381 AsnAsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIle 400
                                                                                                                                                                               SerGlylleCysSerileGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHis 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This DNA sequence codes for a modified serotype C botulinum toxin, termed rBoNF/C (see AAYOS814), in which amino acids His-229, Glu-230
                          121 ValArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLySAlaTyrAsnLeu
                                                                          1030 TICATGAAGAACGAGACCATGTACGCGGACAACCACTCCACCGAGGACATCTACGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Modified toxin useful for systemic delivery of oral vaccines
                                                                                                                                                                                                                                                                                                                                                                                              Botulinum toxin; botulism; rBoNT/C; vaccine; drug delivery;
                                                                                                                                                                                                                                                                                                                                                                           DNA coding for modified botulinum toxin rBoNT/C.
                                                                                                                                                                                                                                                                      1330 ACCCACTGGGGATTCGTCCCAGTCTCCGAG 1359
                                                                                                                                                                                                                                                            ThrHisTrpGlyPheValProValSerGlu 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kiyatkin N. Maksymowych A. Simpson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 1; Page 26-31; 37pp; English.
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32..3907
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                                                                                                                                                                                                                                                                                                                   AAX25521 standard; DNA; 3950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96WO-US21897,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-0954302.
                                                                                                                                                                                                                                                                                                                                                         02-AUG-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                           Clostridium botulinum.
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P-PSDB; AAY05814.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      therapeutic agents
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-0CT-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-0CT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-APR-1999.
                                                                                                                                                                                                                                                                                                                                                                                                          mutant; 88
                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic.
                                                                                                                                                                                                                                                                                                                                      AAX25521;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1678 TTAGTGGATACATCAGGATATAATGCAGAAGTGAGTGAAGAAGGCGATGTTCAGCTTAAT 2737
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41
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Man, rapportively, i.e. the markle sequence are masteriored by QDY, the not was a markle sequence are masteriored by QDY, then the markle may one continues to the continue to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2798 GTAACCCAGAATGAAAATHGTATTGTATGTATGAAAGTTTAGCATTAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 ThrileProPhaksnilePhaSerTyrThrkanAsnSerLeuLeuLysAspilciloAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 GluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2618 GAATATITCAATAATAATGATCAAAAATTTTGAGCCTACAAAAAGATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        42 LeuValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62 ProllePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysVallle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82 valThrGlnAsnGluAsnIleValTyrAsnSerNetTyrGluSerPheSerIleSerPhe
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100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3950 BP; 1589 A; 410 C; 616 G; 1335 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80000
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Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-910-186A-10 (1-450) x AAX25521 (1-3950)
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2386.00
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This is the Day, sequence of the Controllan Boulinam specifyed CI (Ecotholm strain) naurotocial respect ( open contained in planted in planted in the Controllant Strain S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAATAAATGGTTTTTTGTAACTGTTACTAACAATAFGATGGGAAATATGAAGATTTATAT 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               43 lAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnProIl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 ePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValIleValTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         332 ATTICCATITICACITINAALITAGCIACITCAGGGGAGGALAGAGGGAAAGTTATAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103 eArgileAsnLySTrpValSerAsnLeuProGlyTyrThrileIleAspSerValLysAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            152 TAGARANTANATANATANATANATANATTANGGATATANATTANATTGATATANAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               123 nAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuValPheThrLeuLysGlnAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 PropheAsnilePheSerTyr-ThrAsnAsnSerLeuLeuLysAspileIleAsnGluTy
                                                                                            Host cell containing recombinant expression vector encoding coortidum bothlinum type B or E toxin - useful to treat humans and other animals at risk of intoxication with clostridial toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1502 BP; 600 A; 155 C; 249 G; 498 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ndels:
                                                                                                                                                                            Example 46; Page 339-341; 428pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-910-186A-10 (1-450) x AAV30588 (1-1502)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Intoxication with clostridial toxin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.67e-199
2319.00
98.66#
97.99#
19
Phalley BS, Williams JA;
                                          WPI: 1998-230234/20.
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108..1463
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the least one mains acid mutation not present in the wild type D
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    botulinum type D toxin nucleotide sequence

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Non-toxic Immunogenic derivative of clostridium botulinum meurotoxin
type b, useful in vaccines for profection against botulism, compises
Affest one anion acid mutation not present in the Wild type D
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  427 ValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSerThrHisTrpGlyPheVal 446
330 AspWetThrIleAsnAsnLysAlaTyrAsnLeuPheMetLysAsnGluThrMetTyrAla 349
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  369 ---IleAsnAspAsnIleIlePheClnIleGlnProMetAsnAsnThrTyrTyrAla
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                                                             330 ArgAspPheTyrIlePheAlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsn
                                                                                                                                                                                                                                                                   554 GAGTACTACATGATTAATGTAAATTACATGAATCGTTACATGTCTAAAAAGGGTAACGGT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118 ACCATTACCACAACAIGATGGGTAATAIGATGATCIACATTAACGGAAAGCTAATCGAC 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1.8 TIGGGTAGCICIGGTGAIGACCGTGGCAAAAFTATIGFAACICAAAAGGAAAATATIGTT
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333
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Conservative:
Mismatches:
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Claim 8; Page 59-62; 65pp; English.
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Botulinum neurotoxin type D: BoNT; botulism; non-toxic; vaccine; poison;

Clostridium botulinum WO200005252-A1. protect; ds.

03-FEB-2000,

Pype D BoNT non-toxic immunogenic derivative nucleotide sequence.

20-JUN-2000 (first entry)

/*tag- a /product- H_C peptide fragment

12-MAY-2000; 2000WO-US12890

WC200067700-A2

16-NOV-2000

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943 COGTCAAGAAACTTAGGGACAGACCTTGTTCCATTGGGTGCATTAGATCAACCGATGGAC 1002
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478 ACCATCAAAGTGAAAGAATTGACCGGTATCAACTTCTCAAAGACCATTACGTTTCAGATG 537
                               210 AsniysileProAspThrGlyLeulleThrSerAspSerAspAsnileAsnMetTrplle 229
                                                 230 ArgAspPheTyrIlePheAlalysGluLeuAspGlyLysAspIleAsnIleLeuPheAsn 249
                                                                                                                    598 AGAGATITCTATATITTCGCAAAAGAAFTAGATGACAAGGACATTAATATCCTTTCAAT 657
                                                                                                                                                               SerLeuGlnTyrThrAsnYalValLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLys 269
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                                                                                                                                                                                                                                                              18 GAGTACTACATGATTAATGTAAATTACATGAATGGTTACATGTCTAAAAAGGGTAACGGT 777
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New nucleic acids encoding the carboxy- or amino-terminal portions the heavy chain of bottlinum neurotoxin of serotype A-G, useful as vaccine against bottlian
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9905-0133867.
9905-0133867.
9905-0133869.
9905-0133869.
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P-PSDB; AAB04093.
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Query Match:
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12-MAY-1999;
12-MAY-1999;
12-MAY-1999;
29-JUL-1999;
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Botulism toxin heavy chain C-terminal coding sequence (serotype D) Sotulism, toxin, neurotoxin; heavy chain; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium;

11-APR-2001 (first entry)

Location/Qualiflers 10..1365

Synthetic. Clostridium botulinum.

infection; ds.

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US-09-910-186A-10 (1-450) x AAV30591 (1-1469) Percent Similarity: Best Local Similarity: Aliqument Scores: 1036 ATCATCCGTGACACCGACCATCTACGCCACCCAGGGTGGTGACTGTTCCCAGAACTGT 1095 1153 ATCAAGACATCGTCTCCCAAGAACAAGTACTGCCCAGATCTTC---TCCTCCTTTCGT 1209 1210 ---GAGAACACCCATGCTGCTGCCGACATCTACAAGCCTTGGCGTTTCTCC----- 1257 1258 -----TTCAAGAACGCCTACACTCCTGTCGCCGTCACC----AACTACGAGACCAAG 1305 976 CGTATOCTGAACGGTGACAACATCATCTGCACATGCTGTACAACTCCCGTAAGTACATG 1035 1096 GICTACGCCCTGNAGCTGCAGTCCAACCTGGGTAACTACGGTATCGGT---ATCTTCTCC 1152 339 120 399 140 579 639 684 239 259 795 599 975 357 IleTyrAlaileGlyLeuArgGluGlnThrLysAspileAsnAspAsnileIlePheGln 376 377 IleGlnProMetAsnAsnThrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsn 396 397 GlyGluAsnIleSerGlyIleCysSerIle---GlyThrTyrArgPheArgLeuGlyGly 415 229 ACCATCTACACCAACGACTTCAAGTTGTCCTCTTCCGGTGAC-----AAGATCATC 279 100 ATCGAGCAGAACTCCGGTTGGAAGTTGTGTATCCGTAACGGTAACATCGAGTGGATGTTG 459 LysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSerAsnAsnAla 160 161 ProGlyTyr---AsnLySTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMet 179 LyslleTyrileAsnGlyLysLeuIleAspThrIleLysValLysGluLeuThrGlyIle 199 685 ------GAGAACCAGATGTTGTGGATCCGTGACTTCAACATCTTCTCCAAGGAGCTG 735 300 AspPheAsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThr 319 320 ArgValArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsn 339 416 AspTrpTyrArgHisAsnTyrLeuValProThrValLysGinGlyAsnTyrAlaSerLeu 435 102 TrpileArgileAsnLysTrpValSerAsnLeuProGly---TyrThrileIleAspSer 220 SerAspSerAspAsnIleAsnMetTrpIleArgAspPheTyrIlePheAlaLysGluLeu 280 AsnArgTyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsn 916 AAGCTGTACACCGGTAACCCTATCACCATCAAGTCCGTCTCCGACAAGAACCCTTACTCC 82 ValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe 280 STCAACTIGAACAACAACATCTIGTACTCCGCCATCTACGAGAACTCCTGTCTCCTTTC 340 TGGATCAAGATCTCCAAGGACTTGACCAACTCCCACAAGGAGTACAACCATCAACTCC 121 ValLysAsnAsnSerGlyTrpSerTleGlyIleIleSerAsnPheLeuValPheThrLeu 580 AGTICIACATCAACGGIGAGTISAAGCAGTCCCAGAAGATCGAGGACCTGGACGAGGTC 200 AsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThrGlyLeuIleThr 640 AAGCIGGACARCARCGICTTCGGIATCGACGAGAACATCGAC 240 AspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsnValValLysAsp 736 TOCAACGAGACATCAACATCGTCTACGAGGGICAGATCCTGAGGAACGTCATCAAGGAC TyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIleAspTyrLeu 856 GACCGTTACATCGCCCCAGAGTCCAACGTCCTGGTCCTGGTCCAGTACCCTGACCGTTCC 340 LeuPheMetLysAsnGluThrMetTyrAla-----AspAsnHisSerThrGluAsp 180 g à 6 à 용 ò 8 Cooked from \$10940186008 05=05 \$2004 5 a ô g ò a à 8 à à

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memorous in standard generator the Construction protective to memorous in standard sequence of the Construction behavior. The memorous instance of personal contained in planning personal so strengths. On the contained the planning personal so strengths. The memorate contained the c
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constraints being a per sor is coxin - useful to treat humans 
constraints animals at tiek of intoxication with clostrainial toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Antitoxin; vaccine; neurotoxin; toxin D; intoxication; immunogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Clostridium botulinum type D toxin C fragment gene in pETHisb
                                                                                       1306 CTGCTGTGCTCCTCTGGAAGTTCATCTCCGGTGACCAG 1351
LeuGluserThrSerThrHisTrpGlyPheVal-ProValSerGlu 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1469 BP; 581 A; 146 C; 245 G; 497 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 47; Page 352-53; 428pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                        AAV30591 standard; DNA; 1469 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clostridium botulinum serotype
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96US-0704159
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-DEC-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Phalley BS, Williams JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1998-230234/20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BotD; ds.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MO9808540-A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAV30591;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           potulism;
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4 ProPheAsnilePheSerTyr-ThrAsnAsnSerLeuLeuLysAspileIleAsnGluTy 23

1469 186 85 151 111

Conservative Nismatches: Length: Matches: ndels:

803.50 60.22% 41.33% 33.61%

7.06e-63

Page 10 us-09-910-186a-10.rng

The irregulation relates to morel vestions that induce a protective immune sempone significant bouilinum neurocourin (BANT) accorptes A. B. C. D. E. T. B. S. S. B. S. S. B. S Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against Smith JF, Parker M, Dertzbaugh MT, (USME-) US MEDICAL RES INST INFECTIOUS DISEASES Disclosure; Page 43-44; 54pp; English. 99WO-US15570. 98US-0092416. WPI; 2000-160827/14. Lee JS, Pushko P, P-PSDB; AAY77137. WO200002524-A2. 39-JUL-1999; 10-JUL-1998; 12-MAY-1999; 20-JAN-2000. Dotulinum Dotulinum AAZ87215: 398 AA287215 8 qq THESSEAMENTS 8 959 GTATATIGCACCIGAAAGTAATCIACTIGTACTIGITUGGIATCCAGATAAATT 1018 1019 ATATACTGSAAATCCTATTACTATTAAATCAGTATCTGATAAGAATCCTTATAGTAGAAT 1078 1139 AAGAGATACTGATACAATATATGCAACACAAGGAGGAGGAGTGTTCACAAAATTGTGTATA 1198 442 443 TARGATATCTAAAGATTTAACTAATTCTCATAATGAATATAACAATAATTAACAGTATAGA 502 122 SASABSETCLYTESSETTLEGIYILEILESSETASAPHELEUVALPHETATLEULYSGI 142 622 682 221 241 ylysaspileasnileLeuPheAsnSerLeuGlnTyrThrasnValValLysaspTyrTr 261 958 321 lArgGlyGlyAspileLeuTyrPheAspMetThriLeAsnAsnLysAlaTyrAsnLeuPh 341 272 GGAIACATCAGGAIATAATGCAGAAGTGAGGGIAGGAGAGATAATGTTCAACTTAAIACGAI 331 83 rGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPheTrpIl 103 103 eArgileAsnLySTrpValSerAsnLeuProGly---TyrThrlleIleAspSerValLy 122 503 ACAAANTTCTGGGTGGAAATTATGTATTAGGAATGGCAATATAGAATGGATTTTACAAGA 562 yTyr---AsnLysTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMetLysIl 181 181 eTyrileAsnGlyLysLeulleAspThrileLysValLysGluLeuThrGlylleAsnPh 201 683 TTATATAAATGGAGAATTAAAGCAGAGTCAAAAATTGAAGATTTAGATGAGGTTAAGTT 742 221 pSerAspAsnileAsnMetTrpileArgAspPheTyrilePheAlaLysGluLeuAspG1 241 783 ----GAGANTCAGANGCTTTGGANTAGAGATTTTAATATTTTTTCTAAAGAATTAAGTAA 838 839 TGAAGATATTAATATTGTATATGAGGACAAATATTAAGAAATGTTATTAAAGATTATTG 898 281 gTyrMetTyrAlaAs:SerArgGlnIleValPheAsnThrArgArgAsnAsnAspRh 301 301 eAsnGluGlyTyrLysileIleIleLysArgIleArgGlyAsnThrAsnAspThrArgVa 321 341 eMetLysAsnGluThrmetTyrAlaAspAsnHis-----SerThrGluAspIleTy 358 rAlalleGlyLeuArgGluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGL 378 152 CCATATCGRAGGICGICATATGGCTAGGATGGCTTTATTAAAGATATAATTAATGAATA 211 23 rPheAsnAsnAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThrLeuVa 43 63 ePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValileValTh 83 623 ATRIACAATAAATGGTTTTTTGTTACTATAACTAATAATATATGGGGTATATGAAACT 743 AGATAAAACCATAGTATTTGGAATAGATGAGAATATAGAT-----43 lAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnProIl 383 TITAABIBATATATTITATATAGCGCTATTTATGAGAACICTAGIGITAGTITTIGGAT 142 nAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSerAsnAsnAlaProGl 563 TGTTAATAGAAAGTATAAAAGTITAATTITIGATTATAGTGAATCATAAGTCATACAGG 201 eSerLysThrIleThrPheGluIleAsnLysIleProAspThrGlyLeuTleThrSerAs PGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIleAspTyrLeuAsnAr 162 358 à g ö 윱 à 8 à Godied from \$09 FO 186 or 05-209-2004 8 à 8 à à

Smith

"Synthetic botulinum neurotoxin serotype E (BoNTE) heavy chain C-terminal fragment (HC)" 1356 -TITEAAAAFGCATACACGCCAGTTGCAGTAACT-----AATTATGAAACAAACTATT 1408 1199 TGCATTAAAATTACAGAGTAATTTAAGGTAATTATGGTATAGGT---ATATTTAGTATAAA 1255 1256 AAATATIGTATCTAAAATATAATGTAGTGAAATTTTTG---ICTAGTTTTAGG---GA 1309 1310 AAATACAATGCTTCTAGCAGATATATAAACCTTGGAGATTTGCT------1355 uAsnileSerGlyIleCysSerIle---GlyThrTyrArgPheArgLeuGlyGlyAspTr 417 417 pTyrArgHisAsnTyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGl 437 378 nProMetAsnAsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGl 398 Schilinum neurocoxin; heavy chain; BoNT; serotype E; C-reminal Iraqment; Venevelan equine encephalitis virus replicon; VRE; botuliam yaccine; diagnosis; drug screening; ds. DNA encoding synthetic BoNT serotype E (BoNTE) HC fragment 1409 ATCAACTICATCTITITGGAAATTTAIT 1436 uSerThrSerThrHisTrpGlyPheVal 446 Location/Qualifiers 10.,1359 AAZ87215 standard; DNA; 1400 BP 08-MAY-2000 (first entry) /*tag= a Clostridium botulinum. Synthetic.

which is very , in that only he novel ied, and lymph nodes present dalagnostic tools for the diagnosis of botulism. The transformed host calls can be used to analyze the effectiveness of drugs and agents which inhibit towns effects. The vector currently used against botulism is the present ion in yeast.

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toxin ellects. The Vaccine currently used against by	as and expensive to produce, and contains formalin,	for the recipient. Also, the vaccine is incomplete,	7 Serotypes are represented in the formulation. The	of overcomes these problems, as it is easily purifi-	e in large quantities. It is also expressed in the	for a better immune response. Sequences AA287212-287217 rep.	ic DNA sequences encoding BoNT Hc fragments used in	on. These were optimised for codon usage for express		Sequence 1400 BP; 483 A; 298 C; 232 G; 387 T; 0 other;	1.13e-43 Length:	589.50	51.93% Conservative:	
innibit toxin effects	dangerous and expensi	painful for the recit	5 of the 7 serotypes	vaccine of overcomes	available in large or	for a better immune	synthetic DNA sequence	invention. These were		Sequence 1400 BP; 483	Alignment Scores: Pred. No.:	Score: 58		
8	8	8	8	8	8	8	ဗ	ဗ	××	S	A119 Pred	Scool	P.	

17 62 17 Mismatches: Indels: 32.628 24.658 21

09-910-186A-10 (1-450) x AA287215 (1-1400)

54 AGTATICCTTITIBAGCTTICTICITATACAGATGATAAAATTTTAATTICCTACTICAAC 123 ThrileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspileIleAsn 21

42 LeuValAspPhrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn 61

62 ProllepheropheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysVallle 81

à

24 CCAACTAACAAAACCAATTC-----GGTATCTACAACGACAAGCTTACTGAGCTGAAC 297

358 TGGGTCAGGATTCCTAACTACGACAACATCGTCAACGTTAACAACGAGTACGTATC 417 118 IleAspSerValLys -- - AsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeu 136

> à g

558 TIAGGTAACATICACGTITCTGACAACATCTTATTCAAGATGGTTAACTGCAGTTACACG 717 196 LeuThrGlylleAsnPheSerLysThrIleThrPheGlulleAsnLysIleProAspThr 215 à g à 8

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W0200067700-A2 16-NOV-2000 222222 236 AlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 255 216 GlyLeulleThrSerAspSsrAspAsnIleAsnMetTrpIleArgAspPheTyrIlePhe 718 AGATACATT-----GGCATTAGATACTTCAACATTTC

1051 AACTTCGTCGCTAGCAAGACT----CACTTATTC-----CCATTATATGCT 1092 133 TCCTCCTCTCGCAACAGATTTAACCAAGTCGTCGTTATGAACTCCGTCGGTAACAACTGT 1191 192 ACCATGAACTTTAAAAATAAT --- AATGGAAATAAT -------ATTGG 1230 1231 TIGITAGGITTCAAGGCAGATACTGIAGTTGCTAGTACTTGGTAT------1275 1093 GATACCGCTACCACCAAC-------AAGGAGAAGACCATCAAGATC 1131 1276 ---------TATACCCACATGAGATCACCCAACAACAACAACAACAACAACAATGGA 1311 256 ValvalLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsn 275 294 Thrargargasn------AshAshAspPheAshGluGlyTyrLysIleIleLlsLys 310 931 ATCAGAAGCACTATTCTTTTAGCTAACAGATTATACTCTGGTATCAAGGTTAAGATCCAA 990 311 Argile -- - ArgGlyAsnThrAsnAspThrArgValArgGlyGlyAspIleLeuTyrPhe 329 350 AspAsnHisSerThrGluAspIleTyrAlmileGlyLeuArgGluGlnThrLysAspIle 369 370 AsnAsp-----AsnIleIlePheGlnIleGlnProMetAsnAsnThrTyrTyrTyrAla 387 388 SerGinilePheLysSerAsnPheAsnGlyGluAsnIleSerGlyIleCysSerIleGly 407 408 ThrTyrArgPheArg------LeuGlyGlyAspTrpTyrArgHisAsnTyrLeu 423 424 ValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSerThrHis--- 442 871 GIGITANAGCCANCANCANCITCATIGAIAGGAGANAGGAITCIACITIANGCATTAACANC 930 ATTITGAAGGACTICTGGGGTAACTACTTGCTTTACGACAAGGAATACTACTTATTAAAC 330 ASPMELThrileAsnAsnLysAlaTyrAsnLeuPheMetLysAsnGluThrWetTyrAla 276 IleAspTyrLeuAsuArgTyrWet----TyrAlaAsuSerArgGlnIleValPheAsn 1312 TGTTTTFGGACTTTATT 1329 443-TrpGlyPheval 446

BP AAAS4488 standard; DNA; 1400

à g AM 2528

11-APR-2001 (first entry) AAA54488;

Botulism toxin heavy chain C-terminal coding sequence (serotype E) Sotulism; toxin; neurotoxin; heavy chain; recombinant expression;

recombinant vector; antiqen; immune response; vaccine; bacterium;

ds.

Infection;

1208802555

Location/Qualiflers
10..1358
'Atag = Archite Fragment
/product = H_C peptide fragment Clostridium botulinum.

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051 AACTTOGTOGCTAGCAAGACT-----CACTTATTC------CCATTATTGCT 1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               093 GATACCGCTACCACCAAC------AGGAGAAGACCATCAAGATC 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            330 AspMetThrileAsnAsnLysAlaTyrAsnLeuPheMetLysAsnGluThrMetTyrAla 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           388 SerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSerGlyIleCysSerIleGly 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             192 ACCATGAACTTTAAAAATAAT---AATGGAAATAAT------ATGGG 1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408 ThrTyrArgPheArg------LeuGlyGlyAspTrpTyrArgHisAsnTyrLeu 423
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IleAspSerValLys --- AshAshSerGlyTrpSerIleGlyIleIleSerAshPheLeu 136
                                                                                                                                                                137 ValPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIle 156
                                                                                                                                                                                                                                                                                            478 ATTIGGACCITIGGAAGACAACGCAGGTATTAACCAAAAGTTAGCATTCAACTACGGTAAC 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MetGlyAsnNetLys1leTyrIleAsnGlyLysLeu1leAspThr1leLysValLysGlu 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    196 LeuThrGlylleAsnPheSerLysThrIleThrPheGluileAsnLysIleProAspThr 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TINGGIAACATICACGITTCIGACAACATCITATICAAGATCGITAACIGCAGITACACC 717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      216 GlyLeuileThrSerAspSerAspAsnileAsnMetTrplleArgAspPheTyrilePhe 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 718 AGATACATT-----GOCATTAGATACTTCRACATTTC 750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256 ValvallysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsn 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTTGAAGGACTTCTGGGGTAACTACTTGCTTTACGACAAGGAATACTACTATTAAAC 870
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= a /*tag= A /*tag= A /*tag= A /*tag= A /*roduct= "Native botulinum neurotoxin serotype A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Smith L;
                                                                                                                                                                                                                                                                                                                             DNA encoding native botulinum neurotoxin serotype A (BoNTA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dertzbaugh MT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (BoNTA) heavy chain*
/transl_except= (pos:2509..2529, ag:Glv)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seguence 2532 BP; 1038 A; 241 C; 404 G; 849 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                           Botulinum neurotoxin; heavy chain; BoNT; serotype A; Venezuelahn equine encephalitis virus repilicon; Venezuelahn equine encephalitis virus repilicon; des Botulism vaccine; diagnosis; drug screening; de.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (USME-) US MEDICAL RES INST INFECTIOUS DISEASES.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 3; Page 49-50; 54pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                   AA287218 standard: DNA: 2532 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Lee JS, Pushko P, Smith JF,
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586.50
      1312 TGTTTTGGAACTTTATT 1329
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                                                                                                                                                                                                                                                               08-MAY-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1..2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clostridium botulinum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-160827/14.
P-PSDB; AAY77140.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-JUL-1998;
12-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alignment Scores:
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ID AAZ8
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g	2107 ACGGGGACAAAATTTATTATAAAAAATTGCTTCTGGAAATAAAGATAATATTGTTAGA 2166	9	The 50 kDa C-terr
õ	yrPhea	381	usage altered to
g	2167 AATAATGATCGTGTATAATGTAGTAGTAATAAAAAAAAAA	88	proteins of the t
ô	343 LyshanGluThrWetTyrAlaAsphanHisSerThrGluAspIleTyrAlaIleGlyLeu 362	S X	neutralising ant
셤	2221	og -	Sequence 3891 BP;
οy	363 ArgGluGinThrLysAspIleAsnAspAsnIleIlePheGinIleGinProWetAsnAsn 382	Align	Alignment Scores: Pred. No.:
g	2263 GCATTAGAAATACCTGATGTAGGAAATCTAAGTGAGTAGTAGTAGTGAAGTCAAAAAT 2322	Percen	Score: Percent Similarity:
δ,	ThrTyrTyrTyrAlaSerGinileRhoLysSerAsnPheAsnGlyGluAsnIleSerGly	Ones.	Query Match: DB:
8	2323 GATCAAGGAATAACAAATAGGAAAATGAATTTACAAGATAATAATGAGAATGAT	-sa	US-09-910-186A-10 (1-4
Ecq	403 IndcysdoritedlyThrivatogPheArgLewolydlyAsgTrpTyrArgHisAsGTyr 422	6y	3 IleProPheAsr
(S)	423	8 8	2545 ATACCTTTTCAC
te fi		. B	
io ia	441ThrHisTrpGiyPhewalProValSerOlu 450 2473 TTGGGTTGGCCARGGGRAPTRYPCTGTAGATGAT 2508	φ	43 ValAspThrSer
1	50 T 12	a	2665 ATAGACITATCS
09	29244 AAT29244 standard; DNA; 3891 BP.	λō	63 IlePheProPhe
11	AAT29244;	<u>8</u>	2725 ATAGATAAAAA
041	09-JUL-1996 (first entry)	À :	80 valilevalThr
36	C. botulinum type A neurotoxin gene.	90	
320	Toxin; neurotoxin; fusion protein; antitoxin; vaccine; immunogen; ds.	ò :	100 SerPheTrpIle
in:	Clostridium botulinum.	8	
0!	W09512802-A1.	Å :	117 IleileAspse:
12 :	02-MAY-1996.	8	2890 ATAATAAATIG
05	23-OCT-1995; 95W0-US13737.	S 6	23/ VALFRETATION
¥2	N-1995;	3 3	157 Confedencial
(00)	16-MAR-1995; 9508-0405496.	5 8	
4:	(OPHI-) OPHIDIAN PHARM INC.	ογ	176 NetGlyAsnMet
E I	Firca JR, Kink JA, Padhye NV, Stafford DC, Thailey BS; Williams JA;	g	3070 TTAAATAACTC3
X K	WPI: 1996-230603/23	40	196 LeuThrGlylle
XX	P-PSDB; AAR95010.	đ	3130 TTAGGTAATAT
F 2	Rusion proteins comprising non-toxin protein and part of toxin - useful to form anti-toxins adminst Clostridium botulinum type A. and	ζÓ	216 GlyLeuileThr
PT	fficile type toxins, and to treat C. difficile intoxication	a	3190
X Z Z	Example 22; Page 344-350; 434pp; English.	à t	236 Alatyscluter
188	The Clostridium botulinum type A neurotoxin gene (AAT29244) has been cloned and sequenced. It encodes a profesh (AAR95010) that is	8 6	256 ValvalLysAsi
8	processed to form a dimer composed of a light and a heavy chain.	; —	

produced using a synthetic gene (A772245) laving coon produced using a synthetic gene (A772245) laving coon in given expression in Easterichia cool. Fusion type A toxin or C fraqment, with 6, malicose to polyhitatidine affaitity tug, are used to generate titosins and in vaccine compans. ACCITICCARATACGIAGAIAICAANGAITAITAICIACAITIACIGAA 2604 VICABATICAATTATTTAGAAAGTAGT -----AAA 2769 TTTAAAAAATGCTATTGTATATAATAGTATGTATGAAAATTTTAGTACT 2829 PAGAATTCCTAAGTATTTAACAGTATAAGTCTAAATAATGAATATACA 2889 STATEGAAAATAATTCAGGATGGAAGTATCACTTAATTATGGTGAAATA 2949 PACAGGATACTCAGGAAATAAAACAAAGAGTAGTTTTTAAATACAGTCAA 3009 PATCAGATTATATAACAGATGGATTITTGTAACTATCACTAATAATAGA 3069 TARASTITATATATAGGAGGATTAATAGATCAAAAACCAATTTCAAAT 3129 3130 TIAGGIAATATICAIGCIAGTAATAIATAATGITTAAATIGITGAAGATGCTIGIAGAAAAAA STATIBILIANISCHICHARRIGAATIIRAGAIRIGAANGTAATCATIIR 2664 THOGIATSCATCAAAATAATATTGGTAGTAAAGTAAATTTTGATCCA 2724 aProGlyTyr---AsnLysTrpPhePheValThrValThrAsnAsnMct 175 -----CATAGNINITIGGAIAAAATATITAAAIGTITTA ValvallysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMstValAsn 275 eargileAsnLysTrpValSerAsnLeuPro------GlyTyrThr 116 rvallysasnasnSerGlyTrpSerIleGlyIleIleSerAsnPheLeu 136 sulysGlnAsnGluAspSerGluGlnSerIleAsnPhcSerTyrAspIle 156 htlysileTyrileAsnGlyLysLeuileAspThrileLysValLysGlu 195 216 GlyLeuIleThrSerAspSerAspAsnIleAsnMctTrpIleArgAspPheTyrIlePhe 235 236 AlalysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 255 22 mileAsnAspSerLysileLeuSerLeuGlnAsnArgLysAsnThrLeu 42 seasp-----PhelysleudlySerSerGlyGluAspArgGlyLys 79 relyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnPro 62 urglnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIle 99 snllePheSerTyrThrAsnAsnSerLeuLeuLysAspIleIleAsnGlu .eAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThr 2; 1580 A; 392 C; 629 G; 1290 T; 0 other; 3891 149 186 55 55 Length: Matches: Conservative: Mismatches: Indels: -450) x AAT29244 (1-3891) Gaps: 7.276-43 586.50 48.948 31.578 24.538 3190 ò a ò 8

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transfers polypeptide across vesicular membrane, and a therapsutic
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                                                                                                       Disclosure, Page 29-32; SOpp; English.
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3286 ATTITAAAAGACTITITGGGGTGATTATITACAATATGATAAACCATACTATATGITAAAT 3345
                                                                                                                                     3346 TTATATGATCCAAATAAATATGTCGATGTAAATAATGTAGGTATTAGAGGTTATATGTAT 3405
                                                                                                                                                                                                                                                                          3466 AGGGGACAAAATTTATTATAAAAAATATGCTTCTGGAAATAAGATAAAGATAATATTGTTAGA 3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3580 ------GCTACTAATGCAICACAGGCAGGCGTAGAAAAATACTAAGT 3621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      622 GCATTAGAAATACCTGATGTAGGAAATCTAAGTCAAGTAGTAGTAATGAAGTCAAAAAT 3681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3682 GATCAAGGAATAACAAATAAATGC---AAAATGAATTACAAGATAATAATAATGGGAATGAT 3738
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          423 LeuValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSer---- 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            288 -------ArgGinileValPheAsnThrArg---ArgAsnAsnAsnAspPheAsn 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         323 GlyGlyAspileLeuTyrPheAspWetThrileAsnAsnLysAlaTyrAsnLeuPheMet 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              343 LysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGlyLeu 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   363 ArgGluGlnThrLysAspIleAsnAspIaleTleTheClnIleGlnDroMetAsnAsn 382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        383 ThriyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSerGly 402
                                                                                                                                                                                                                                                                                                                                                    303 GluGlyTyrLysileIleIleLysArgileArgGlyAsnThrAsnAspThrArgValArg
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                                                                  276 IleAspTyrLeuAsnArgTyrMetTyrAlaAsnSer-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D6-APR-2000; 2000NC-US09142.
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Conservative: Mismatches: Indels: Length: Matches:

2752 aaattotttaagagattaaagstagttoagtttaaatatgagataaaagataaaatgataa 2811 22 GluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThr 41 2812 TACGTAGATACTTCAGGATATGATTCAAATATAAATATTAATGGAGATGTATAAAAATAT Novel isolated single-chain polypeptide derived from activatable recombinant clostridial neurotoxin useful as therapeutic agents, US-09-910-186A-10 (1-450) x AAF58862 (1-4017) Example 9; Page 45-47; 90pp; English. C botulinum BoNT/E neurotoxin cDNA transporter molecules and adducts 1.56e-42 583.00 50.866 31.906 24.386 25-AUG-2000; 2000WO-US23427. 99US-0150710 (ALLR) ALLERGAN SALES INC. Chan KC; clostridial neurotoxin; Clostridium botulinum. WPI; 2001-218454/22. Best Local Similarity: LA Y, the invention. W0200114570-A1. Percent Similarity: 25-AUG-1999; Alignment Scores: 01-MAR-2001. Dolly JO, Query Match: DB: Score: ò ò a õ ò 3936 4095 3643 ATTITAMANGACITITGGGGTGATTATTTACAATATGATAACCATACTATATGTTAAAT 3702 3703 JTATATGATCCAAATAAAJATGTCGAIGIAAAJAAJAAJAGGTAJTAGAGGTJATAJGJAT 3762 1979 GCATTAGAAATACCTGATGTAGGAAATCTAAGTCAAGTAGTAGTAATGAAGTCAAAAAA 4038 3487 TIAGGIAATATICAIGCIAGIAATATATAAIGTITIMATIAGAIGGITGIAGAGATACA 3546 1763 CTTAAAGGCCTAGAGGTAGCGTAATGACTACAAACATTTATTAAATTCAAGTTTGTAT 3822 322 342 1129 NINGCINARCINGINGCANGTARITGGIRIRATRGACAANINGANAGAICINGINGGACI 4188 157 SerAsnAsnAlaProGlyTyr---AsnLysTrpPhePheValThrValThrAsnAsnMet 175 176 MetGlyAsnMetLysIleTyrIleAsnGlyLysLeuIleAspThrIleLysValLysGlu 195 3427 TTANATAACTCTANAATTTATATAAATGGAAGATTAATAGATCAAAAACCAATTTGAAAT 196 LeuThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThr 216 GlyLeuileThrSerAspSerAspAsnIleAsnMetTrpIleArgAspPheTyrilePhe 236 AlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 3583 GATAAGGAATTAAATGAAAAGAAATCAAAGATTTATATGATGAATCAAATTCAGGT ValValLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsn 276 IleAspTyrLeuAsnArgTyrMetTyrAlaAsnSer-------------ArgGlnIleValPheAsnThrArg---ArgAsnAsnAspPheAsn 303 GluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgValArg 323 GlyGlyAspileLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPheMet 343 LysAsnGluThrMetTyrAlaAspAsnH1sSerThrGluAspIleTyrAlaIleGlyLeu 363 ArgGluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGlnProMetAsnAsn 383 ThriyriyrAlaSerGinIlePheLysSerAsnPheAsnGlyGluAsnIleSerGly 039 GATCAAGGAATAACAAATAAATGC---AAAATGAATTTACAAGATAATAATGGGAATGAT IleCysSerIleGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHisAsnTyr 423 LeuValProThrvalLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSer----4189 TIGGGIIGCICAEGGGAATTIATTCCIGTAGAIGAL 4224 -----ThrHisTrDGIvPheValProvalSerGlu 450 AAF58862 standard; DNA; 4017 BP (first entry) 23-MAY-2001 AAF58862: 288 403 441 AAF58862 ID AAF Ecopieds from 4 09 104 86 80 05 05 52004 8 8 90 à a ö a à õ

Activatable neurotoxin; protesse cleavage; H chain; L chain;

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The present invention execution are interesting and translocation conceptions a therapeutic element, and a bridding and translocation element from best conceptions as the message of a process, the bringsparie and translocation because of the springs and translocation element notice from the foreign of the prints and translocation element notice from the process of partial schools and the personal process of prints and process of the process of the process of the personal process of the process of the personal process of the process of the personal process of the process of the personal personal process of the process of the personal persona

Sequence 4017 BP; 1673 A; 430 C; 565 G; 1349 T; 0 other;

Length: Matches: Conservative: Mismatches: Indels:

42 LeuvalaspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn

62 ProllePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile

2972 CCAACTABTAAAAATCAATTT-----GGAATATATAATGATAAACTTAGTGAAGTTAAT 2925

Db 3849 [1] [11:1:3544 NAME			28-AUG-1996; (OPHI-) OPHIDIA Thalley BS, Wi		CONTINIES AND ADMINISTRATION OF THE CONTINE ADMINISTRATION OF THE CONTIN	20,000	Bast Local Stellarity: 33-374 Missaches: 168 Operg Match: 33-304 Gaps: 78 DB: 33-00-10-186A-L0 (1-450) x ARVIG579 (1-1876)		Db 2566 THTRARMGCRARMITTTRARMVAFRTUNTCTFTRAGNTNTRAGGNTRANGANTATTTR 2625 Oy 43 VRIABFTHTSGTLYTYRAGNIACIUVALSGTCIUGIUGIYAGFVAIGIGIGEUAGNFTO 62
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2626 ATAGATTTATCAGGATATGGGGCAAAGGTAGAGGTATATGATGGAGTCGAGCTTAATGAT 2685 3 Copied from 209 10 186 on 05-05-2004 à

3031 ITGAATAACGCTAAAATTTATATTAATGGTAAGCTAGAATCAAATACAGATATTAAAGAT 3090 3136 ------GGTGATATAGATAGAACACAATTTAGATGAAATATTTCAGTATT 3183 1184 TITAATACGGAATTAAGTCAATCAAATATTGAAGAAAGATATAAAATTCAATGTATAGC 3243 3424 GGAGAAAATTTATTATATAGAAGA ---AAGTCAAATTCTCAATCTATAAATGATGATATA 3480 3541 IATACCIATAAAIATTTTAAGAAGAGAA.....GAA 3573 3574 AAATTGTTTTAGCTCCTATAAGTGATTCTGATGAGTTTTACAAT-----ACTATA 3624 2686 -----NANAATCAATTTAAATTAACTAGTTCAGCA-----AATAGTAAGATTAGAGTG 2733 2734 ACTCAMANTCAGAATATCATATTTAATAGTGTTCCTTGATTTTAGCGTTAGCTTTTGG 2793 854 ATANTTANTIGIAIGAAAATAATTCGGGCTGGAAAATATCTATTAGGGGTAATAGGATA 2913 2974 AGAGAAGATATATCAGAGTATATAAATAGATGGTTTTTTTGTAACTATTACTAATAAT--- 3030 IleArgileAsnLysTrp------ValSerAsnLeu-----ProGlyTyrThr 116 117 IlelleAspSerValLysAsnAsnSerGlyTrpSerlleGlylleIleSerAsnPheLeu 136 ValPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIle 156 157 SerAsnAsnAlaProGlyTyr---AsnLysTrpPhePheValThrValThrAsnAsnMet 175 MetGlyAsnMetLysIleTyrIleAsnGlyLysLeulleAspThrIleLysValLysGlu 195 196 LeuthrGlyIleAsnPheSerLysThrileThrPheGluIleAsnLyslleProAspThr 215 216 GlyLeuIleThrSerAspSerAspAsnIleAsn---MetTrpIleArgAspPheTyrIle 234 235 PheAlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThr 254 255 AsnValValLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetVal 274 275 AsnileAspTyrLeuAsnArgTyrMetTyrAlaAsnSer-----ArgGlnile 290 ValPheAsnThrargArgAsnAsnAsnAsn------AspPheAsnGlu 303 304 GlyTyrLyslleIleIleLysArgIleArgGlyAsnThr -----AsnAspThrArg 320 321 valArgGlyGlyAspileLeuTyrPheAsp---MetThrileAsnAsnLys----- 336 337 --- AlaryrasnLeuphewetLysasnGlurhrMetryralaaspasnHisSerThrGlu 355 356 AspileTyralalleGlyLeuArgGluGlnThrLysAspileAsnAspAsnileIlePhe 375 GlnIleSlnProMetAsnAsnThrTyrTyrTyrAlaSerGln---1lePheLysSerAsn 394 83 ThrGlnAsnGluAsnIleValTyrAsnSerWetTyrGluSerPheSerIleSerPheTrp 102 63 IlePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValIleVal 82 â Š â à

1739 GGAATTGTATTTGAAGAGTATAAGATTATTTTTGTATAAGTAAATGGTAC----- 3789 3790 -----TTANANGAGGTNANANGGAANCCATATANTTTANANTTG------GGATGT 3834 8682 ---GATGAAGAAAGTACTGATGAGATAGGATTGATTGGTATTCATCGTTTCTACGAATCT 3738 3625 CARATARAGGARTATCATGAACAGCCAACATATAGTTGTCAGTTGCTTTTTTAAAAA--- 368) 395 PheAsnGlyGluAsnIleSerGlyIleCysSerIleGlyThrTyrArgPheArgLeuGly 414 415 Gly------AspTrpTyrArgHisAsn 421 422 TyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSerThr 441 Search completed: November 7, 2002, 17:51:59 Job time: 279 secs 442 HisTrpGlyPheValProValSerGlu 450 3835 AATTGGCAGTTTATTCCTAAAGATGAA 3851 ð g ò g

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                                                                                                         FILMS DATE: US DB/161,907
FILMS DATE: 02-DBC-1993
APPLICATION DATA:
                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 07/985,321
FILING DATE: 04-DEC-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 07/429,791
FILING DATE: 31-0CT-1989
ATTORNEY/AGENT INFORMATION:
APPLICATION NUMBER: US 08/329,154
FILING DATE: 25-OCT-1994
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                                                                                              PRIOR APPLICATION DATA:
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346 TIATATGATCCAAATAAATATGTCGATGTAAATAATGTAGGTATTAGAGGTTATATGTAT 3405
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MetGlyAsnMetLysIleTyrIleAsnGlyLysLeuIleAspThrIleLysValLysGlu 195
                                                                                                                                                                                                                                                                                                                                                         216 GlyLeuIleThrSerAspSerAspAsnIleAsnMetTrpIleArgAspPheTyrIlePhe 235
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                                                                                                                                                                            196 LeuThrGlylleAsnPheSerLysThrlleThrPheGluIleAsnLysIleProAspThr
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TITLE OF INVENTION: VACCINE FOR CLOSTRIDIUM BOTULINUM
TITLE OF INVENTION: NEUROTOXIN
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830 ACCITITGGALAGAATECCTAAGIATITEACAGIATAAGTCIAAATAATGAATATACA 2889
                                                                                                                                                                                                                                                                                              890 ATAATAAATTGTATGGAAAATAATTCAGGATGGAAAGTATCACTTAATTATGGTGAAATA 2949
                                                                                                                                                                                                                                                                                                                                                                                                                                      2950 ATCTGGACTITACAGGATACTCAGGAAATAAACAAAGAAGTAGTTTTTAAATACAGTCAA 3009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3010 AIGATTAATATATATATATATATATATAAACAGATGGATTTTTGTAACTATGACTAATAATAGA 3069
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                                   2770 ATTGAGGTAATTITAAAAATGCTATTGTATATATAGTATGTATGAAAATTTTAGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      157 SerAsnAsnAlaProGlyTyr -- - AsnLysTrpPhePheValThrValThrAsnAsnMet 175
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   303 GludlyTyrLysileIleIleLysArgileArgGlyAsnThrAsnAspThrArgValArg 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           323 GlyGlyAspileLeuTyrPheAspMetThrileAsnAsnLysAlaTyrAsnLeuPheMet 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            343 LysasnGluthrMetTyralaAspaSnHisSerThrGluAspileTyrAlaTleGlyLeu 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3580 ---------GCTACTAATGCATCAGGCGGGGGGGAAAAAATACTAAGT 3621
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                                                                                                    100 SerPheTrpileArgileAsnLySTrpValSerAsnLeuPro-----GlyTyrThr 116
                                                                                                                                                                                                                                    117 IleIleAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPhbLeu 136
                                                                                                                                                                                                                                                                                                                                                                     137 ValPheThrieuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIle 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              176 MetGlyAsnMetLysileTyrileAsnGlyLysLeulleAspThrileLysValLysGlu 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               196 LeuThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThr 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               216 GlyLeulleThrSerAspSerAspAsnileAsnMetTrplleArgAspPheTyrllePhe 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236 AlalysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3406 CTTAAAGGGCCTAGAGGTAGCGTAATGACTACAAACATTTAATTTAAATTCAAGTTTGTAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2605 TATATTAAGAATATTATTAATACTTCTATATTGAATTTAAGATATGAAAGTAATCATTTA 2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 23 TyrPheAsnAsnIeAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThrLeu 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43 ValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnPro 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63 IlePheProPheAsp-----PheLysLeuGlySerSerGlyGluAspArgGlyLys 79
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Matches:
Conservative:
Mismatches:
220 MONTGOMERY STREET, SUITE 2200
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/329,154
PILING DATE: 25-0CT-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UMBER: US 07/985,321
04-DEC-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 07/429,791
FILING DATE: 31-0CT-1989
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 08/161,907
                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                        IBM PC compatible
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REGISTRATION NUMBER: 40,027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 705-8410
TELEFAX: (415) 397-8338
INFORMATION FOR SEQ ID NO: 27:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: DNA (genomic)
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                                                                                                                                                                                                                                    Floppy disk
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TYPE: nucleic acid
STRANDEDNESS: double
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48.948
31.578
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APPLICATION NUMBER: US
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APPLICATION NUMBER: (
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                                                                SAN FRANCISCO
CALIFORNIA
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MEDIUM TYPE: Florov
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ADDRESSEE.
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                                                                                                                                                                                                                                                                                                                                         SOFTWARE:
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Length:

Pred. No. :

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3772 ATAGCTAMACTAGTAGCAAGTAATTGGTATAATAGACAAATAGAAAGATCTAGTAGGACT 3831
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AREACHANI THALLEY MNOCE S.
AREACHANI THALLEY MEMORE S.
AREACHANI THALLEY SERVICE S.
AREACHANI THALLEY S.
AREACHA
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SOFTWARE: Patentin Ralease #1.0, Version #1.30
CURRENT PAPLICATION DATA: 185/08/915,135
                                                                                                                                                                                                                    3832 TTGGGTTGCJCATGGGAATTIATTCCTGTAGATGAT 3867
                                                                                                    441 -----ThrHisTrpGlyPheValProValSerGlu 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 220 MONTGOMENY STREET, SUITE 2200
STREET: 220 MONTGOMENY STREET, SUITE 2200
CITY: SAN FRANCISCO
CITY: SAN FRANCISCO
COUNTY: ONLINED STATES OF AMERICA
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APPLICATION NUMBER: US 08/405,496
FILING DATE: 16-MAR-1995
PRIOR APPLICATION DATA:
APPLICATION NAMES: US 08/329,154
FILING DATE: 25-00T-1994
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APPLICATION NUMBER: 08/480,604
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 27, Application US/08915136
Patent No. 6290960
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
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CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: UP
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TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 705-8410 TELEFAX: (415) 397-8338 INFORMATION FOR SEQ ID NO: 27: SEQUENCE CHARACTERISTICS:

MOLECULE TYPE: DNA (genomic) LENGTH: 3891 base pairs TYPE: nucleic acid STRANDEDNESS: double

NAME/KEY: CDS LOCATION: 1..3888 ropology: linear

Alignment Scores:

US-08-915-136-27

159 169 179 179 179 179 179 179 179 179 179 17	Aspheryrilehe Tartraarcrittr LeuglnTyrThrasn CarcaarTcAGGT	GLUTYTTYPHETALBOOTTYPHETALBOOTTYPHETALBOOTTA	10101110101
with the properties of the pro	SerAspSerAspAssori SerAspSerAspAssori SerAspSerAspIleAs SerAspAsAspIleAs SerAspAsAsAsAsArCAA	SAGETH TOTAL VAN SEAD LEAD TO THE SEAD LEAD LEAD LEAD LEAD LEAD LEAD LEAD L	GGCCTRONGETMGCGTMATGMC+mcmmcm+++m+++mm-
INTERPRETABLE INTERP	GlyLeuIl GlyLeuIl AlaLysGl	ATTTAAA IleaspTy ILEASpTy TTATATGA	CITAMAGO
Section 1975 1976 1	26 36 26 36	3386 3346 3346 3346	3
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- 학교의 전 양 선 : 선 번 전 번 전급한 선 번 전 요 오늘은원날등일원부분등적원자원은 날 중요보다는 중요만 요문 요문 요문	PRIOR APPLICATI	APPLICATION APPLICATION DE PILLING DE PILLIN	NAME: II REGISTRA REFERENCE TELECOMMUNI	TELEPHON	SEQUENCE CI LENGTH TYPE IN TYPE IN TYPE IN TYP	MOLECULE T FEATURE: FEATURE: LOCATION	US-08-480-604A-	Score: Percent Similar: Best Local Simil Query Natch: DB:	US-09-910-186A-	4	Db 45 CCATA	105	Qy 43 lAspTi	DP 165 CGACC	Qy 63 ePheP	Db 225 CGACA	Oy 80 lilev	100	DD 330 CTTCTN	Qy 117 ellek	Db 390 CATCA	Qy 137 19heT	450	Oy IS/ rAshA	176
3 8 3 8 3 8 Cépied From 109 10186 on 05-05-2004	303 GluGlyTyrLyellellellellelyekrgllekrgClykenthrasnkspThkrygvalkrg	323 GlyGlyAspileLeduTyrPheAspWetThrileAshanLyaAlaTyrAsnLeuPheNet	343 LysasmGluthrmetTyralaaspashtaserThrGluaspIleTyralaalleGlyLeu 3580	363 ArgGluGlnThrLysAspileSnabsnileTlePheCinileGlnProMethankan	9-0-2 GCATTAGAAATACCTGATGTAGGAAATCTGAAGCCAAGTAGTAACTGAAAAAT 99-3 THYYTYTYTYTYTAGGGGGTGTAGGAAATCTAAAAAAT 98-3 CAATCAAGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	uGlyGlyAspTrpTyrArgHisAsnTyr	aSerLeuLeuGluSerThrSer ::: TAGACAAATAGAAGATCTAGTAGGACT	127 441Threttertreds/Pherovalterothu 450 128 12 Tracegracyck/radea/Arth/Artolforhea/Gar 1892 Tracegracyck/radea/Arth/Artolforhea/Gar	SULT 4 118-48-60-604A-25 Francia 06 A-21-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	The patent No. 5736139 CONTROL OF	APPLICANT: KINK, JOHN A, APPLICANT: THALLEY, BROUGE S, APPLICANT: PARHEY, BROUGE S,	APPLICANT: FIRCA, JOSEPH R. APPLICANT: STAFFORD, DOUGLAS C.	TOXIN FOR DIFFICILI	CORRESPONDENCES: 32 CORRESPONDENCES: 32 ADDRESSER: MEDIEN & CAPBOLIT ILD		STATE: CALIFORNIA COUNTRY: UNITED STATES OF AMERICA	COMPUTER READABLE FORM:	COMPUTER: IBM PC compatible COMPUTER: IBM PC compatible COMPUTER: PC-DOS/NS-DOS	SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: A DETTOARDED SHAPES.	FILTER CALES NOTHING CONTROL OF C	PRIOR APPLICATION DATA APPLICATION NIN BRANCH 115 08/422.711	FILING DATE: 14-APR-1995	: APPLICATION NUMBER: US 08/405,496 : FILING DATE: 16-NAR-1995	PARON APPLICATION DATA: APPLICATION NUMBERS US 08/329,154 FILTH DATE: 25-CT-1904	PRICOR APPLICATION NATA: REPLICATION NUMBER: US 08/161,907 FILING ORFE: 02-02-1993

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STINICCTGANGANICCTATCGTATACAACTCTATGTACGAAAACTTCTCCACCTC 329
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Matches:
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PLICATION DAMA:
TION NUMBER: US 07/985,321
DATE:
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23.36%
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225 CGACAAGAATCAGATCCAGCTGTTCAATCTGGAATCTTCC------AAAAT 269
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Matches:
Conservative:
Mismatches:
Indels:
                                                          E TYPE: DNA (genomic)
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558.50
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DEDNESS: double
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                                     linear
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330 CTTCTGGATCCGTATCCCGAAATACTTCAACTCCATCTCTCTGAACAATGAATACACCAT 389

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APPLICANT: TRALLEY, BROCE S.
APPLICANT: TRALLEY, BROCE S.
APPLICANT: DAVINEY, MISSAW, V.
APPLICANT: DAVINEY, MISSAW, V.
APPLICANT: STARFORD COUGLAS C.
APPLICANT: STARFORD COUGLAS C.
APPLICANT: OF INVESTIGATION PROFITED INFORMATION PROFILE DISPASE.
TITLE OF INVESTIGATION PROFILE DISPASE. OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PECOTLIN SOLOSOE #1.0, Version #1.30 CURRENT APPLICATION DATA: : MEDLEN & CARROLL, LLP 220 MONTGOMERY STREET, SUITE 2200 OPHD-01763 UNITED STATES OF AMERICA 05/08/915,136 APPLICATION NUMBER: US 08/405,496 FILING DATE: 16-MAR-1995 US 08/329,154 UMBER: US 08/161,907 02-DEC-1993 US 07/985,321 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/429,791
FILING DATE: 31-0CT-1989 Sequence 25, Application US/08915136 Patent No. 6290960 PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/480,604 COMPUTER READMBLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible REFERENCE/DOCKET NUMBER: 00.027 TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 705-8410 TELEPAX: (415) 397-838 INFORMATION FOR SEQ ID NO: 25: MOLECULE TYPE: DNA (genomic) APPLICATION NUMBER: US OF FILING DATE: 25-OCT-1994 PRIOR APPLICATION DATA: 04-DEC-1992 ATTORNEY/AGENT INFORMATION: SEQUENCE CHARACTERISTICS: LENGTH: 1402 base pairs 558.50 48.73% 31.14% 23.36% INGOLIA, DIANE E. nucleic acid EDNESS: double PRIOR APPLICATION DATA: PRIOR APPLICATION DATA: PRIOR APPLICATION DATA: NUMBER OF SEQUENCES: 3 CORRESPONDENCE ADDRESS: CITY: SAN FRANCISCO STATE: CALIFORNIA APPLICATION NUMBER: APPLICATION NUMBER: APPLICATION NUMBER: linear GENERAL INFORMATION: Percent Similarity: Best Local Similarity: Query Match: CLASSIFICATION: NAME/KRY: CDS FILING DATE: FILING DATE: STRANDEDNESS FILING DATE: 94104 FILING DATE: ADDRESSEE: Alignment Scores: TOPOLOGY: LOCATION: 35-08-915-136-25 US-08-915-136-25 COUNTRY: STREET: STATE: FEATURE: 078 ------GCTACCAATGCTTCTCAGGCTGGTGAAAAGATCTTGTCTGC 1121 1122 TCTGGAAATCCCGGACGTTGGTAATCTGTCTCAGGTAGTTGTAATGAAATCCAAGAACGA 1181 1182 CONGGGTATCACTAACAAATGC --- AAAATGAATCTGCAGGACAACAATGGTAACGATAT 1238 239 CGGTTTCATCGGTTTCCACCRGTTC-----AACAATAI 1271 966 IGGTACCAARTICATCATCAAAAAAAACGGTCTGGTAACAAGGACAATATCGTTCGCAA 1025 1026 CARIGAICGIGIAIACAICAAGAAGAIGIIAGIIAAGAACAAAGAAIACCGICIG----- 1077 450 CTGGACTCTGCAGGACACTCAGGAATCAACAGCGTGTTGTATTCAAATACTCTCAGAT 509 629 906 GAAAGGTCCGCGTGGTTCTGTTATGACTACCAACATCTACCTGAACTGTTCCCTGTACCG 965 303 uGlyTyrLysIleIleLysArgIleArgGlyAsnThrAsnAspThrArgValArgGl 323 323 yGlyAspileLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPheMetLy 343 343 sAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGlyLeuAr 363 363 gGluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGlnProMetAsnAsnTh 383 383 rTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSerGlyIl 403 403 eCysSerIleGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHisAsnTyrLe 423 423 uvalProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSer----- 440 117 elleAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleLleSerAsnPheLeuVa 137 137 IPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSe 157 157 rAsnAsnAlaProGlyTyr---AsnLysTrphePheValThrValThrAsnAsnMetNe 176 510 GATCAACATCTCTGACTACATCAATCGCTGGATCTTGGTTACCATCACCAACAATCGTCT 569 176 tGlyAsnMetLyslleTyrIleAsnGlyLysLeuIleAspThrIleLysValLysGluLe 196 196 uThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThrGl 216 530 GGGTAACATCCACGCTTCTAATAACATCATGATCAACTGGACGGTTGTCGTGACACT-- 687 216 yLeulleThrSerAspSerAspAsnIleAsnMetTrplieArgAspPheTyrllePheAl 236 236 aLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsnVa 256 256 IValLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIl 276 786 CCTGAAAGACTTCTGGGGTGACTACCTGCAGTACGACAAACCGTACTACATGCTGAAATCT 845 276 eAspTyrLeuAsnArgTyrMetTyrAlaAsnSer----287 846 GTACGATCCGAACAATACGTTGACGTCAACAATGTAGGTATCCGCGGTTACAAGTACCT 905 288 ------ArgGlnIleValPheAsnThrArg---ArgAsnAsnAspAbpheAsnGl 303 1332 GGGTTGCTCTTGGGAGTTCATCCCGGTTGATGAC 1365 441 ----ThrHisTrpGlyPheValProValSerGlu 450

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g õ a ò a ð 90 Conservative: Mismatches: Indels:

Length: Matches:

APPLICATION NUMBER: NUMBER OF SEQUENCES: CALIFORNIA 94104 US-08-480-604A-22 COUNTRY: APPLICANT: STATE: ò a a 8 a 966 TGGTACCAAATTCATCATCATCAAGAAATACGCGTGTGGTAACAAGGACAATATCGTTGGCAA 1025 105 CATCAAGAACATCATCATCCTCCATCCTGCACCTACGAATCCAATCACTGAT 164 65 CGACCTGTCTCGCTACGATTCAACATCGGTTCTAAAGTTAACTTCGATCCGAT 224 GGACAAGAATCAGATCCAGCTGTTCAATCTGGAATCTTCC------AAAAT 269 80 lileValThrGlnAsnGluAsnIleValTyrAsnSerNetTyrGluSerPheSerIleSe 100 GAAGTTATCCTGAAGAATGCTATCGTATACAACTCTATGTACGAAACTTCTCCACCTC 329 IPheTrplieArglieAsnLysTrpValSerAsnLeuPro------GlyTyrThril 117 CITCIGGATCCGTATCCCGAAATACTTCAACTCCACTCTCTCTCAACAATACAACAT 389 elleAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuVa 137 CATCAACTGCATGGAAAACAATTCTGGTTGGAAAGTATCTCTGAAACTACGGTGAAATCAT 449 1PheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSe 157 CTGGACTCTCCAGGACACTCAGGAAATCAAACAGCGTGTTGTATTCAAATACTCTCAGAT 509 157 rAshAshAlaProGlyTyr---AshLysTrpPhePheValThrValThrAshAshMetMe 176 GAICHACAICICIGACIACAICACAICGCIGGAICIICGTIACCAICACCAACAACAACCICI 569 tGlyAsnMetLysIleTyrIleAsnGlyLysLeuIleAspThrIleLysValLysGluLe 196 570 GAATAACTCCAAAATCTACATCAACGGCCGTCTGATCGACCAGAAACGGATCTCCAATCT 629 uThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThrGl 216 530 GGGTAACATCCACGCTTCTAATAACATCATGTTCAAACTGGACGGTTGTCGTGACACT-- 687 216 yLeuileThrSerAspSerAspAsnileAsnMetTrpileArgAspPheTyrilePheAl 236 588 -----CACCGCTACATCTGGATCTACATCTTCAATCTTCGATCTTCGA 725 alysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsnVa 256 CAAAGAACTGAACGAAAAAGAAATCAAAGACCTGTACGACAACCAGTCCAATTCTGGTAT 785 CCTGAAGACTTCTGGGGTGACTACCTGCAGTACGACAAACCGTACTACATGCTGAATCT 845 eAspTyrLeuAsnArgTyrMetTyrAlaAsnSer----- 287 GTACGATCCGAACAATACGTTGACGTCAACAATGTAGGTATCCGCGGTTACATGTACCT 905 288argGlnileValPheAsnThrArg---ArgAsnAsnAsnAspPheAsnGl 303 906 GAAAGGTCCGCGTGGTTCTGTTATGACTACCAACATCTACCTGAACTCTTCCCTGTACCG 965 uGlyTyrLyslleileijeiysArgileArgGlyAsnThrAsnAspThrArgValArgGl 323 323 yGlyAspileLeuTyrPheAspMetThrileAsnAsnLysAlaTyrAsnLeuPheMetLy 343 23 rPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThrLeuVa 43 43 LASPINISerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnProIl 63 ePheProPheAsp-----PheLysLeuGlySerSerGlyGluAspArgGlyLysVa 80 4 ProPheAsnilePheSerTyr-ThrAsnAsnSerLeuLeuLysAsplielleAsnGluTy 23 US-09-910-186A-10 (1-450) x US-08-915-136-25 (1-1402) 00 061 726 556 98 Expired from al 094 01 86800 05+05+2004 8 ò g ð g ò a ð ត 음

182 CCAGGGTATCACTAACAATGC -- - NAAATGAATCTGCAGGACAACAATGGTAACGATAT 1238 1272 CGCTAAACTGGTTGCCAACTGGTACAATGGTCAAAGGTTGGTCGTCGCACTCT 1331 .078 -------GCTACCATGCTTCTCAGGCTGGTGAAAAAACATCTTGTCTGC 1121 122 TCTGGAAATCCCGGACGTTGGTAATCTGTCTCAGGTAGTTGTAATGAAATCCAAGAACGA 1181 239 GGGTPTCATCGGTTTCCACCAGTTC-----AACAATAT 1271 343 sAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGlyLeuAr 363 363 gGluGlnThrLysAspileAsnAspAsnIleIlePheGlnIleGlnProMetAsnAsnTh 383 383 rTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSerGlyIl 403 403 eCysSerileGlyThrTyrargPheArgLeuGlyGlyAspTrpTyrArgHisAsnTyrLe 423 423 uValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSer-----APPLICANT PADHYE, NISHA V.
APPLICANT: THEA, JOSEPH R.
APPLICANT: STAFFORD, DOUGHAS C. ATTITUR OF HENRYHION: MOCKOTHE AND TITLE OF IMPRITION: PREVENTION OF C. DIFFILID DISBASE
TITLE OF IMPRITION: PREVENTION OF C. DIFFILID DISBASE SOFTWARE: Patentin Release #1.0, Version #1.30 3: MEDIEN & CARROLL, ILP 220 MONTGOMERY STREET, SUITE 2200 1332 GGGTTGCTCTTGGGAGTTCATCCCGGTTGATGAC 1365 441 ----ThrHisTrpGlyPheValProValSerGlu 450 PRIOR APPLICATION DATA: APPLICATION NUMBER: US 08/422,711 FILING DATE: 14-APR-1995 US 08/161,907 US/08/480,604 UNITED STATES OF AMERICA Sequence 22, Application US/08480504A Patent No. 573613 GRNEAL INFORMATION: APPLICANT: KINK, JOHN A. COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS KINK, JOHN A. THALLEY, BRUCE S. FILING DATE: 07-JUN-1995 CLASSIFICATION: 424 APPLICATION NUMBER: US 08 PILING DATE: 02-DEC-1993 APPLICATION NUMBER: US 07 FILING DATE: 04-DEC-1992 PRIOR APPLICATION DATA: PRIOR APPLICATION DATA: PRIOR APPLICATION DATA: CORRESPONDENCE ADDRESS: ADDRESSEE: MEDLEN & STREET: 220 MONTGOME CITY: SAN FRANCISCO APPLICATION NUMBER:

US 07/429,791

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93 MetTyrGluSerpheSerIleSerPheTrplleArglleAsniysTrpValSerAsnLeu 112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       189 AspThrIleLysValLysGluLeuThrGlyIleAsnPheSerLysThrIleThrpheGlu 208
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                                                                                         MARE: TROOLA, DAYAR E.,
REGISTRATION NUMBER: 40,037
RELEGENATION NUMBER: 40,037
FELENCHER (1413) 7037
FERENCHER (1413) 7037
FERENCHE
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FILING DATE: 31-OCT-1989
ATTORNEY/AGENT INFORMATION:
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STRANDEDNESS: double
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8 8	229	IlergAspPheryrIlePheAlaLysGluLeuAspGlyLysAspIleAsnIleLeuPhe 2.	8 6
3 8	1 0		
8 8	691	GACAACCAGTCCAATTCTGGTATCCTGAAAGACTTCTGGGGTGACTACTGCAGTACGAC	2 2
8	269	LysGluTyrTyrMetValksnileAspTyrLeuAsnArgTyrMetTyrAlaAsnSer 2 	
g	751	AAACCGTACTACATGCTGAATCTGTACGATGCGAACAAATACGTTGACGTCAACAATGTA 8	2
ő	288		295
og.	811	GGTATCCGCGGTTACATGTACCTGAAAGGTCCGCGTGGTTGTGTTATGACTACCAACATC	870
δŏ	296	ArgAsnAsnAsnAspPheAsnGludlyTyrLysIleIleIysArgIleArgGlyAsn 3	315
8	871		930
ŏ	316	ThrespasspihrargvalargGlyGlyaspileLeuTyrPheaspMetThrileAspass	335
q	931		980
Qy	336	LysalaTyrasnLeuPheMetLysasnGluThrMetTyralaAspAsnHisSerThrGlu 3	10
Q.	991	AAAGAATACCGTCTGGCTACCAATGCTTCTCAGGCT 1	102
õ	356		375
q	1027	GGTGTAGAAAAGATCTTGTCTGGAAATCCCGGACGTTGGTAATCTGTCTG	108
Qy	376		395
ėg.	1087	GIRGIAAIGAAAICCAAGAACGACCAGGGIAICACIAACAAAIGCAAAAIGAAICG	114
ò	396	AsnGlyGluAsnIleSerGlyIleCysSerIleGlyThrTyrArgheArgLauGlyGly 4	415
QQ	1144		119
ő	416	AspTrpTyrArgHisAspTyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeu 4	90
QQ	1192	AACAATATCGCTAAACTGGTTGCTTCCAACTGGTACAATCGTCAG 1	53
οž	436	LeuGluSerThiserThrHisTipGlyPheValProValSerGlu 450	
qq	1237	ATCGAACGTTCCTCGCACTCTGGGTTGCTCTTGGGAGTTCATCCCGGTTGAIGAC 1293	
RESULT US-08-	9-405		
	quency tent	22, Application US/08405496A o. 5919665	
	ENERAL	SENERAL INPORMATION:	
	TITLE	APPLICANT: WILLIAMS, JAMES A. TITLE OF INVENTION: VACCINE FOR CLOSTRIDIUM BOTULINUM	
	NUMBI	OF INVENTION: NEUROTOXIN R OF SEQUENCES: 30	
	CORRI	SPONDENCE ADDRESS:	
	SIS	STREET	
	SE	CITY: SAN FRANCISCO STATE: CALIFORNIA	
	85	NTRY: USA : 94104	
	COMP	TER READABLE FORM:	
	8	COMPUTER: IBM PC compatible	
	8	OPERATING SISTEM: PC-DOS/NS-DOS SOFTWARE: Patentin Release #1.0, Version #1.30	
	CURR	NT APPLICATION DATA: LICATION NUMBER: US/08/405,496A	
	FIL	INC DATE: 16-MAR-1995	

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169 ValThrValThrAsnAsnMetMetGlyAsnMetLysIleTyrIleAsnGlyLysLeuIle 188
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APPLICATION WOMENS US 00/16,907
MPTILINO NATE: 079 1992-1993
MPTILINO NATE: 079 1992-1993
MPTILINO NATE: 079 1992-1993
PILINE NATE: 079 1992-1993
MPTILINO NATE: 079 1993-1993
MPTILINO NATE: 079 1993
MPTILINO NATE: 079 199
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUBER: US 08/329,154
FOR THE: 25-CCT-1994
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.087 GTTGTAATGBAATCCAAGAACGACCAGGGTATCACTAACAAATGC---AAAATGAATCTG 1143
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475 GTTACCATCACCAACAATCGTCTGAATAACTCCAAAATCTACATCAACGGCCGTCTGATC 534
                                                                                                                                                                                             535 GACCAGAAACCGATCTCCAATCTGGGTAACATCCACGCTTCTAATAACATCATGTTCAAA 594
                                                                                                                                                                                                                                                                                            209 IleAsnLysIleProAspThrGlyLeuIleThrSerAspSerAspAsnIleAsnMetTrp 228
                                                                                                                                                                                                                                                                                                                                                                                 595 CTGGACGGTTGTCGTGACACT-------CACCGCTACATCTGG 630
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           631 ATCAMATACTICANICTETICSACARAGANCTGANCGANANGANATCANAGACTGINC 690
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                                                                                                                 189 AspThrileLysValLysGluLeuThrGlyIleAsnPheSerLysThrIleThrPheGlu 208
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APECIONY: TRACLEY, BRECE S.
APECIONY: TRACLEY, RESEA, S.
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APECIONY: APECINE, RESEA, S.
APECIONY: TRACLEY S.
APECIONS: WACKEN BO ANTIOXIX BOX TRACKERY AD
TITLE OF INVENTION: PREPARATION OF C. DEFICILE DISBASE
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; Sequence 22, Application US/08915136
; Patent No. 6290960
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Page 11

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MEDITM TTPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTWARE: Petertin Release #1.0, Version #1.30
UNTREPHY APPLICATION DAYA:
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Natches:
Conservative:
Nismatches:
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                          5: MEDLEN & CARROLL, LLP
220 MONTGOMERY STREET, SUITE 2200
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RESERRANCE/NOCKER NUMBER: 00H0-01763
FELECOMMUTICATION INFORMATION:
TELECHOME: (415,705-8410
PELEPAN: (415,397-8338
INFORMATION FOR SEQ ID NO: 22:
                                                                                                                                                                                                                                                                                               US 08/405,496
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/429,791
                                                                                   UNITED STATES OF AMERICA
                                                                                                                                                                                               05/08/915,136
                                                                                                                                                                                                                                         PRIOR APPLICATION DAIA:
APPLICATION NUMBER: 08/480,604
                                                                                                                                                                                                                                                                                                                                               FILING DATE: 25-000-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08:
FILING DATE: 02-000-1993
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 07/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 31-OCT-1989
ATTORNEY/AGENT INFORMATION:
NAME: INGOLIA, DIANE E.
                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08
FILING DATE: 16-MAR-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1330 base pairs
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557.50
48.80%
31.37%
23.32%
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NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: MEDLEN & CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleic acid
                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                     SAN PRANCISCO
                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
FILING DATE: 25-OCT
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FEATURE:
NAME/KEY:
LOCATION:
LOCATION:
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Pred. No.:
                                                                                COUNTRY:
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08:
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ò 9 à g 56 GlyAspValGlnLeuAsnProIlePheProPheAsp-----PheLysLeuGlySer 72

027 GGTGTAGAAAAGATCTTGICTGCTCTGGAAATCCCGGACGTTGGTAATCTGTCICAGGTA 1086 087 GTTGTAATGAAATCCAAGAACGACCAGGGTATCACTAACAAATGC ---AAAATGAATCTG 1143 76 CinileCinProMetAsnAsnThrTyrTyrTyrAlaSerGinIlePhetysSerAsnPhe 395 396 AsnGlyGluAsnIleSerGlyIleCysSerIleGlyThrTyrArgPheArgLeuGlyGly 415 150 IleasnPheSerTyrAspIleSerAsnAsnAlaProGlyTyr---AsnLysTrpPhePhe 168 169 ValThrValThrAshAshMetNetGlyAshMetLysIleTyrIleAshGlyLysLeulle 188 209 IleasnLysIleProAspThrGlyLeuIleThrSerAspSerAspAsnIleAsnMetTrp 228 296 ArgAsnAsnAsnAspPheAsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsn 315 371 TACCTGAACTCTFCCCTGTACCGTGGTACCAAATTCATCATCAAGAAATACGCGTCTGGT 930 316 ThrAsnAspThrArgValArgGlyGlyAspIleLeuTyrPheAspWetThrIleAsnAsn 335 931 AACAAGGACAATATOGTTCGCAACAATGATGGTGTATACATCAATGTTGTAGTTAAGAAC 990 336 LysklaTyrAsnLeuPheMetLysAsnGluThrMetTyrAlaAspAsnHisSerThrGlu 355 156 AspileTyrAlaileGlyLeuArgGluGlnThrLysAspileAsnAspAsnIleIlePhe 375 30 TCTAAAGTTGAACTTGGATGGATGGAGAATCAGAATCAGAATCAGGATGAATGTGGGAATCT 189 90 TCC ------AAAATCGAAGTTATCCTGAAGAATGCTATCGTATACAACTCT 234 93 MetlyrGluSerPheSerIleSerPheTrpIleArgIleAsnLysTrpValSerAsnLeu 112 113 Pro-----GlyTyThrIleIleAspSerValLysAsnAsnSerGlyTrpSerIle 129 130 GlyileileSerAsnPheLeuValPheThrLeuLysGinAsnGluAspSerGluGinSer 149 355 TCTCTGAACTACGGTGAAATCATCTGGACTCTGCAGGACACTCAGGAAATCAAACAGGGT 414 189 AspThrIleLysValLysGluLeuThrGlyIleAsnPheSerLysThrIleThrPheGlu 208 335 GACCAGAAACCGAICTCCAATCTGGGTAACATCCACGCTTCTAATAACATCATGTTCAAA 594 995 CTGGACGGTTGTCGTGACACT -----CACCGCTACATCTGG 630 531 ATCAAATACTTCAATCTGTTCGACAAAGAACTGAACGAAAAGAAATCAAAGACTGTAC 690 751 AAACCGTACTACATGCTGAATCTGTACGATGCGAACAAATACGTTGACGTCAACAATGTA 810 288 ----ArgGlnIleValPheAsnThrArg--- 295 BIL GGIATCCGCGGGTTACAIGTACCTGAAAGGTCCGCGTGGTTTCTGTTATGACTACCAACATC 870 73 SerGlyGluAspargGlyLysValIleValThrGlnAsnGluAsnIleValTyrAsnSer 92 295 TCTCTGAACAATGAATACACCATCATCACACGCATGGAAAACAATTCTGGTTGGAAAGTA 269 LysGluTyrMetValAsnIleAspTyrLeuAsnArgTyrMetTyrAlaAsnSer---229 IleArgAspPheTyrIlePheAlaLysGluLeuAspGlyLysAspIleAsnIleLeuPhe 591 GACAACCAGTCCTGGTATCCTGAAAGACTTCTGGGGTGACTACCTGCAGTACGAC 235 ATGTACGAAAACTTCTCCACCTCCTTCTGGATCCGTATCCCGAAATACTTCAACTCCATC 249 AsnSerLeuGlnTyrThrAsnValValLysAspTyrTrpGlyAsnAspLeuArgTyrAsn à 유

1144 CAGGACAACAATGGTAACGATATCGGTTTCATCGGTTTCCACCAGTTC------1191

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734 ACTCAAAATCAGAATATCATATTATAATAGTGTTCCTTGATTTTAGCGTTAGG 2793
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                                                    3566 TATAATAGGGAAATTITAAATATATATETETAAATTIAAGATATAAGGATATAAGGATAATATTA 2625
                                                                                                                                                                                                                                                                                                                                  83 ThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPheTrp 102
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                                                                                                         43 ValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnPro 62
                                                                                                                                                                                                                         63 IlePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValIleVal 82
23 TyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThrLeu 42
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; Patent No. 5780024
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                                                                                  1192 -------AACAATATCGCTAAACTGGTTGCATTCAACTGGTACAATCGTCAG 1236
                             416 AspTrpTyrArgHisAsnTyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeu 435
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                                                                                                                                                                          1237 ATGGAAGGTTCCTCTCGCACTCTGGGATGCTCTTGGGAGTTCATCCGGGTTGATGAC 1293
                                                                                                                                      436 LeuGluSerThrSer-----ThrHisTrpGlyPheValProValSerGlu 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: STERNE, KESSLER, GOLDSTEIN, & FOX P.L.L.C.
1100 NEW YORK AVENUE, NW, SUITE 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0. Version #1.30 (EPO)
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130
64
117
12
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APPLICANT: Shone, corad Patralg
APPLICANT: Poster, Keith Alan
TILLE OF INVENTION: Recombinant Toxin Fragments
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Mismatches:
Indels:
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Matches:
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TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 100 202-371-2600
TELECA: 202-371-2600
INFORMATION FOR SEQ ID NO: 19:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/GB97/02273
FILING DATE: 22-AUG-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/255,829
FILING DATE: 23-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 08/782,893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                               Sequence 19, Application US/09255829
Patent No. 6461617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
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ADDRESSEE: STERNE, KI
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
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Pred. No.:
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Query Match: core:

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OSMPOTRE: Tan Oc Competible
OSMRANTH SISTEM: PC-DOS/MS-DOS
OSMRANTH PERGELS: PC-DOS/MS-DOS
OSMRANTH PREGELS: PC-DOS/MS-DOS
ORNERNY APPLICATION DATA:
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οy	113	ProGlyTyrThrileIleAspSerValLysAsnAsn	124
g	809	GAACAATATGGCACAAATGAGTATTCAATAATTAGCTCTATGAAAAAAAA	868
93	125	SerdlyTrpSerIleGlyIleIleSerAsnPheleuValPheThrLeuLysGln	142
g	698		978
49	143	AsnGluAspSerGluGinSerIleAsnPheSerTyrAspIleSerAsnAsnAlaProGly	162
Q	929	TOGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	985
δ	163	TyrAsnlysTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMetLys	180
Q G	986		1045
δò	181	IleTyrileAsnGlyLysLeuileAspThrileLysValLysGluLeuThrGlyIleAsn	200
a	1046	TTGTATATAAATGGAGTACTTATGGGAAGTGCAGAAATTACTGGTTTAGGAGCTATTAGA	1105
οy	201	aulleTh	550
q	1106	GAGGATAATAATAATAACATTAAAACTAGATAGATGT	1141
Q	221	AspSerAspAsnIleAsnMetTrpIleArgAspPheTyrIlePheAlaLysGluLeuAsp	240
g	1142	aataataataataatacgittctatigataaatitaggatatttgcaaagcattaaa	1201
ò	241	GlyLysAspIleAsnIleLeuPheAsnSerLeuGinTyrThrAsnValValLysAspTyr	260
QQ	1202	CCAAAAGAGATTGAAAAATTATACACAAGTTATTATTATCTATAACCTTTTTAAGAGACTTC	1261
ò	261	Trp6lyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIle	276
QQ	1262	TGGGGAAACCCTTTACGATATGAGAATATTATTATAATACCAGTAGCTTCTAGTTCT	1321
Qy	277	Asprylleu	284
Dp	1322	AAAGATGTTGAATTGAAAAATATAACAGATTATATGTGTATTTGACAAATGGGGCCATGGTAT	1381
Qy	285	AlaAsnSerArgGinileValPheAsnThrargArgAsnAsnAsnAspPheAsnGluGly	304
q	1382	ACTAACGGAAAATTGAATATATATAGAAGGTTATATAAT	1426
Qy	305		323
셤	1427	CTAAAATTTATTATTATAAAAGATATACACCTAATAATGAAATAGATTCTTTGTTAAATCA	1486
9	324	GlyAspileLeuTyrPheAspMetThrileAsnAsnLysAlsTyr	338
q	1487	GOTGATTITATAAATTATATGATCATATAACAATAATAATGAAGCACATGTAGGTTATCCG	1546
0.0	339		335
Q	1547	AAAGATGGAAATGCCTTTAATAATCTTGATAGAATTCTAAGAGTAGGTTATAATGCCCCA	1606
0,	356	AspileTyralalleGlyLeuArgGluGlnThrLysAspileAsnA	375
Q	1607	GGTATCCCTCTTAAAAAAATGGAAGCAGTAAAA	1642
ò	376	GlnIieGlnProMetAsnAsnThrTyrTyrAlaSerGlnIiePheLysSerAsnPhe	395
đ	1643		1684
97	396	AsnclyGluAsnileSerGlyIleCysSerIleGlyThrTyrArgPheArgLeuGlyGly	415
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8 PheSerTyrThrAsnAsnSerLeuLeuLysAspIleIleAsnGluTyrPheAsnAsnIle 27

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Ouery Match: 17.57% Indels: 110 DB: 1 Geps: 20	US-09-910-186A-10 (1-450) x US-07-618-312A-1 (1-1359) Oy 6 Asnll@PheSerfyrThrAgnAsnSerleuLeuLy8AspilelieAsnGluTyrPheAsn 25	Db 7 ABSCTGGATTGTTGGGTTGBTABTGBAGATATAGATGTTATA51	Oy 26 AsnileAsnAspSeriysileLeuSerieuGlnAsnArghysAsnThrieuValAspThr 45	-	Oy 66 PhensphleLysteuGlySerSerGlyGlu	dy 79 Lysvalilevalthrdinkandiukanilevaltyrkanserkettyrdlusarpheser 98	dy 99 ilasarbhaTrpllakrgllakaniyaTrybalSarkaniauPro	Oy 114OLyTyrThrileIleAspSerVallysAshAsha	Oy 128 SerileGlyllelleSerAmpheleuvalPherhriculysGlahanGluhspSerGlu 147	Oy 148 GINSerlieAssPheSerTyrAsplieSerAsnAsnAlaPtroGlyTyr	Oy 166 TrpPhePheValThrValThrAshAshAshAstMctGlyAshWctLys1leTyrIleNasnGly 185	dy 186 LysteulleAspThrlteLysYalLysGluteuthrClyIteAsoPhaSerLysFhrile 205 by S62 GFACTFARGGGAAATTACTGGTTFAGAGCTFTAGAGGARATAATTAC1 by S62 GFACTFARGGGAAATTACTGGTTFAGAGCTFTAGAGCATTAGAGAAATTACTAC1 contact the contact of	dy 206 ThrPheGluileAaniyaileProAspThrGlyneulleThrSerAspSerAspSerIle 225	Oy 226 AshwetrpileArgAspPheTyrilePheAlaLysCluLeuAspClyLysAspTleAsn 245 Db 659 TACGTTCCTATAAAATTAGGATATTTGGAAAGATTAAATCAAAAGAAAG	Oy 246 IlelauPhekeiSerleuGlnTyrThrAsnYalVallyAAspTyrTrpGlyAsnAspLeu 265 T18 hAHTHYTACACATATTAYCHARACCTTTTAAGAGACTTGGGGGAACACCTTTTA 777	Oy 266 Ardyrabniysclutyrtyrbetvalabnile	Oy 277	Cy 290 ilevelpheauthracparpsankensonsopheauciudiyyrysiseleile 309
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1003 CTGTACGTTTCTTACAACAACAACGAACACATCGTTGGTTACCCGAAAGACGGTAACGCT 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1063 PTCAACAACCIGGACAGAATICTGGGTGTTGGTTACAACGCTCCGGGTATCCCGGTGTAC 1122
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              201 ICT---CTGGGTCTGGTTGGTACCCACACGGTCAGATCGGTAACGACCCGAACCGTGAC 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1258 ATCCTGATGGTTCTAACTGGTAC---TTGAACACTGAAAGACAAAATC----- 1305
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                        146 IleLeuPheAsnSerLeuGlnTyrThrAsnValValLysAspTyrTrpGlyAsnAspLeu 265
                                                                                                            18 AAACTGTATACCAGCTACCTGTCTATCACCTTCCTGCGTGACTTCTGGGGTAACCCGCTG 777
                                                                                                                                                266 ArgTyrAsnLysGluTyrTyrMetValAsnIle------276
                                                                                                                                                                                    778 CGTTACGACACCGAATATTACCTGATCCCGGTAGCTTCTAGCTCTAAAGACGTTCAGCTG 837
                                                                                                                                                                                                                        277 ....-AspTyrLeu----AsnArgTyrMetTyrAlaAsnSerArgGln 289
                                                                                                                                                                                                                                                            838 AAAAACATCACTGACTACATGTACCTGACCAACGCGCCGTCCTACACTAACTG 897
                                                                                                                                                                                                                                                                                                     290 IleValPheAsnThrArgArgAsnAsnAsnAspPheAsnGluGlyTyrLysIleIleIle 309
                                                                                                                                                                                                                                                                                                                             898 AACATCTACTACTACGAGGTCTGTACAAC------GGCCTGAAATTCATCATC 942
                                                                                                                                                                                                                                                                                                                                                                         LysargileArgGlyAsnThrAsn---AspThrArgValArgGlyGlyAspIleLeuTyr 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                 329 PheAspMetThrileAsnAsnLysAlaTyr------AsnLeu 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             341 PheMetLysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIle 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361 GlyLeuArgGluGlnThrLysAspIleAsnAspAsnIleIleFheGlnIleGlnProMet 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              381 AsnAsnThrTyrTyrTyrAlaSerGinIlePheLysSerAsnPheAsnGlyGluAsnIle 400
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GREEAL HYDRICATEON US/08280228

GREEAL HYDROWNYION:
APPLICANT: Rounene Dr. Michael A
APPLICANT: Rounene Dr. Michael A
APPLICANT: Rounene Dr. Michael A
APPLICANT: Rounene Dr. Jeffrey J
APPLICANT: Elive
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ADDRESSEE: NIXON & VANDERHYE P.C. STREET: 1100 No. 5571694th Glebe Road

NUMBER OF SEQUENCES: 1 CORRESPONDENCE ADDRESS: STATE: Willington, COUNTRY: U.S.A. ZIP: 22201-4714

COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk

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S2 ---TAAAAAAGGTACAATTTTAAATTTAGATATTAATAATGATATTAATA 108
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COMPUTED: INR PC comparatible COMPUTED: TIRM PC comparation SESTIMEN: PC-DOS/NS-DDS SOSTIMEN: PREMENT BELBERG #10. Version #1.25 PREJUGARION DATA: 10. Version 10.
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                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 07/618,312
FILING DATE: 27-NOV-1990
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: GB 8926832.0
FILING DATE: 28-NOV-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GB 9006097.1
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ORGANISM: Clostridium tetani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Wilson, Mary J. REGISTRATION NUMBER: 32,955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 816-4000
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MOLECULE TYPE: DNA (genomic)
HYPOTHETICAL: NO
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(703) 816-4100
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APPLICATION NUMBER: GB 90
FILING DATE: 17-MAR-1990
ATTORNEY/AGENT INFORMATION:
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nucleic acid
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NPORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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PRIOR APPLICATION DATA:
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Cy 431 AsnīyralaSerLeuLeuGluSerThrKisTrpGlyPheValFroValSerGlu 450 1306	RESULT 128-3 US-608-280-228-3 : Sequent No. 573594 ; Patent No. 573594	GENERAL INFORMATION AND A MINISTER J APPLICANT: MARCÉE DE, ANDERS A APPLICANT: RORMAGO DE, ALCARD A APPLICANT: RORMAGO DE, ALCARD A APPLICANT: CALARE DE, JOÉTERO J	APLICANT SALVAGED Dr. Nell F TITLE OF INVENTIONS VACCINES OWNERS OF SECURIORS CONTREROUND TO THE SECURIOR OF T	ADDRESSER NIXON & VANDERIYE P.C. STREET: 1100 No. 5571694th Glebe Koad CTYY: ALIIngrom, STRYER: Virginia	COUNTY, U.S.A. 22201-4714 COMPUTER REMARKED, CONTY, CONTY	COMPUTER: 188 TO COMPATIBLE OF	APPLICATION NAMES IN SX/08/780, 28 FILING DATE: 35-URL-1944 FILING DATE: 35-URL-1944 FILING APPLICATION DATE:	APPLICATION NUMBER: USG 07/618,312 FILING DATE: 27-80V-1990 FILING PREFICATION 143-1990 FROM APPLICATION DATA.	APPLICATION WINDER: GB 92 683.0 FILMS DATE: 28-NOV-489 FRIGH APPLICATION WINDER: GB 9006097.1		REFERENCE/COCKER WRUBER: 1.17-163) FELECOMMUNICATION INFORMATION: FELECOMMUNICATION 186-4000 FELEVAN: (70.3) 816-4100	TELEX: 20/05/9 NING UR INPOSANTION TO RESULD NO. 3: SEQUENCE ASACKTERISTICS: LASACKTERISTICS: LASACK		NYFORMETTAL: NO NYFORMETTAL: NO ONTENTAL SOURCE ONTENTAL SOURCE CONTENTAL	; FRANCE: CDS ; MARKET: CDS ; COGTOR: 11356 US-08-280-283.	6 Length: Matches:	Dest Long Match: 1.57% Minarches: 110 Oct Match: 1.00 Obs: 1.00 Ob
		8 GINSETLeAsnDheSerTyrAspILsSerAsnAsnAsptrodlyTyrAsnLys 165	56 TrpPheDheValThrValThrAmhsnwatWetGlyAsmWetLysIleTyrIleAsmGly 185	Se Instead Second Second	56 ThrPheSlutleAsnLysileProAspThK3LyLeUlsThtSetAspSetAspAsnIle 225 22 ASKTANANANANANANANANANANANANANANANANANANAN	66 AsiMetTrplieArgAspPheTyrliePheAlaLysGluLeuAspClyLysAsplieAsn 245	6 IleLeuDhakanSerLeuGlnTyrThrasnValValLyakspfyrTrpGlykanAspLeu 268 AnarhakanSerLeuGlnTyrThrasnCyrTrTrakanAsharkcyrTrygodayAcccrrp 777	56 ArgTyrkmitysDluTyrTyrMetValAmile	77	00 IlevalPhekanthrArgArgkankankankapPhekanGLuclyTyrLysIleIleIle 309	O DyakqilokigolyashThrashkaprhrkiyolyalisigotisicotyr 338 	99 PhokapWerThrlleAsnAaniyaAlafyr	11 PhoMatiyaAanGluThrMatTyrAlaAapAanKisSenThrGluAapIlaTyrAlaila 360 THANTAXTCTTGARAGAATCTRAGAGTAGTAATROCCCAGGTATCCTCTTFAT 1122	II Giylewkrgdiwdinfhriyakapilekenkapkanileilapkaginilediaproket 380	31 Amhanthriy:TyrTyrAlaSerGlnItePheLysSerAmPheAmcOlydluAmrile 400 17 GGTGATTTANAAACCHTTGGGRAACHTANATTATATATATGGTGATATATATATATATATATATATA	1) Serciyi.ecysSerii.qiythriyrAxgPheArgicediyqiyAge 1) TCTTHAGACTAGTAGGAACCARAATAGCAACAATAGCAAATAGGAACAATAGGAAT	.7

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V-1990
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Dr, Michael A
, Jeffrey J
her Dr, Neil F
VACCINES
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οy	9	AsmilePheSerTyrThrAsmAsmSerLeuLeuLysAspilelleAsmGluTyrPheAsm 25	
8	7	AACCTTGATTCTTGGGTCGACAACAACAACAACATCGTTGTTTTTC 51	
οy	56		
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6 6	46	SerGlyFyrAsnAlaGluValSerGluGluGluGlyAspValGlnLeuAsnFrollePheFro 65	
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自自	265	GITACTICIGCECGCGCGTTCCGAAGTTTCTGCTTCCCACCGGAAAGTACGGCACT 32	
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991	385	TCTGTTTCCCTGAAGGGTAACAACCTGATCTGGACCTGAAAGACTCCGGGGGGAAGTT 44	
01	148	GinSerileAsnPheSerTyrAspileSerAsnAsnAlaProGlyTyrAsnLys 165	
86	156	TrpPhePheValThrValThrAsnAsnMetMetGlvAsnMetLvsIleAsnGlv	
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65ª	186	LysLeuileAspThrileLysValLysGluLeuThrGlyileAsnPheSerLysThrile 205	
·05f	206	ThrPheSullieAshlyslleProAspThrGlyLeulleThrSerAspSerAspAshlle 225 ATTHREE CONTROL OF THE CONTROL OF T	
-20	226	ASNMETTrplieArghapPheTyrllePheAlaLysGluLeuAspGlyLysAspileAsp 24	
004	658	TACGTATCCATCGACAAGTTCCGTATCTTCTGCAAAGCAGTGAACGGAAAGAAGAGATCGAA 71	
1 8 8	246	IleLeuPhaAsnSerLeuClnTyThrAsnValValLySAspTyTTpGlyAsnAspLeu 265	
ć,	266		
8	778	GETANGRANGCRATETTACCTGATCCCGGTACTTCTAGCTCTAAAGACGTTCAGCTG 837	
67	277	AspTyrLeuAspArgTyrWetTyrAlaAsnSerArgCln 289	
g	838	MAMACATCACTGACTACATGTACCTGAC	
ç g	290	IleValPheAsnThirArgArgAsnAsnAsnAspPheAsnGluGlyTyrLysIleIleIle 309	
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                                          Sequence 2,
Sequence 6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALIGNMENTS
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score greater than or equal to the score of the result being printed,
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Patent No. US2020107199A1
GENERAL INFORMATION:
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                                                                                                                                           10 ATCACCATCCATTCAACATCTTCTCCTACAACCAACAACTCCCTGTTGAAGGACATCATC
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                                                                                                              361 GlyLeuArgGluGlnThrLysAspileAsnAspAsnIleIlePheGlnIleGlnProMet
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TTTLE OF INVENTION: Methods of Administering Botulinum Toxin
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19 MAINGER PERIODS of Administrating Deculinum Toxin in Mainger 1921, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 1922, 
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Matches:
Conservative:
Mismatches:
Indels:
Gaps:
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TrpGlyPheValProValSerGlu 450
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Application US/10051952
US20020107199Al
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863.50
61.20%
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36.11%
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172 ACTACTAAATTT------3207
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2638 TIANTAGATICALCIGGALATGGTGCAACTATGAATGTAGGTTCAGATGTTATCTTTAAT 2697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 812 TGGGTAAGGACTCCTAAATATAAAATATAATGATATACAAACTTATCTTCAAAATGAGTAT 2871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2872 ACARTARTTAGTIGTRIANANANTGACTCAGGATGGAAAGTATCTATTAAGGGAAAINGA 2931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2932 ATAMINGGACATINAMAGATGTTAATGCAAAANTCTAAATCAATATTTTTCGAATATAGT 2991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1992 ATAMANGATAMTATATCAGATTATAMATAMATGGTTTTCCATAACTATTACTAATGAT 3051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    268 ANTACTTTRABAGGITTTTGGGGGAATCCTTTRAGATAGGATACACAATACTATCTGTTT 3327
                                                                                                                                                                                                                                                                                                                                                                                             2518 AGTATACCATTTGATCTTTCACTATATACCAAGGACACAATTTTAATACAAGTTTTTAAT 2577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2578 AATTATATTAGTAATATTAGTAGTAATTTTAAGTTTAAGTTATAGAGGTGGCGT 2637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2698 GATATAGGAAATGGTCAATTTAAATTAAATAATTCT----GAAAATAGTAATATACG 2751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2752 GCACATCRAAGTAAATICGITGTATATGATAGTATGTITGATAATITTAGCATTAACTIT 2811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       136 LeuValPheThrLeuLysOlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAsp 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  156 IleSerAsnAsnAlaProGlyTyr---AsnLySTrpPhePheValThrValThrAsnAsn 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195 GluLeuThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAsp 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  215 ThrdlyLeuIleThrSerAspSerAspAsnIleAsnMetTrplleArgAspPheTyrIle 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      235 PheAlaLysGluteuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThr 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255 asnValValLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetVal 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82 ValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           116 ThrileileAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPhe 135
                                                                                                                                                                                                                                                                                                                                                    2 ThrileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspIleIleAsn 21
                                                                                                                                                                                                                                                                                                                                                                                                                                       22 GluTyrPheAsnAsnIlcAsnAspSerLysIlcLeuSerLeuGlnAsnArgLysAsnThr 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42 LeuValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnL@uAsn 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 prollepheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile 81
Description of Artificial Sequence: synthetic primers used to furroduce Stu I and ECOR I restriction sites into the 5' and 3' ends of the BONYA'L chain gene fragment
                                                                                                                                                     3894
155
87
171
77
                                                                                                                                                                                                   Conservative:
                                                                                                                                                                                                                                                                                                          US-09-910-186A-10 (1-450) x US-10-051-952-9 (1-3894)
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Indels:
                                                                                                                                                         Length:
Matches:
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588.50
49.39%
31.63%
                       INFORMATION:
INFORMATION:
INFORMATION:
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275 AsnileAspTyrLeuAsnArgTyrMetTyrAlaAsnSerArgGlnileValPheAsnThr 294

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FRATURE:

3 IleProPheAsnIlePheSerTyrThrAsnAsnSerLeuLeuLysAspIleIleAsnGlu

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3387	304	3444	321	3504	341	3534	359	3570	379	3615	393	3675	406	3735	425	3789	440	3849	
	295 ArgargasnasnasnaspPheasnGluGly	3388 GCACCACGTACAACTTTAATAATGCAGCAATAAATTATCAAAATTTATTATTATTTTTGGT 3444	305 TyrLysileIleIleLysArgileArgGlyAsnThrAshAspThrArgVal	TTACGATTTATTATAAAAAAGGATCAAATTCTCGGAATATAAATAA	322 ArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPhe 341	AGAGAAGGAGATTATATATCTTAATATT	WetlysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAla	3535GATAATATTCTGATGAATCTTAGAGAGATATATCT 3570	360 ileGlyLeuArgGluGlnThrLysAspileAsnAspAsnIleIlePheGlnIleGlnPro 379	TTGGTGAATTCTAAGAATTCAAACTCAATTTTTTAGCACC	380 MethsnasnPhrTyrTyrTyrAlaSerGlnilePhetysSer 393	ATABATGATGATCCTACGTTCTATGATGTACTACAATAAAAAATATTATGAAAAAAA	AsnPheAsnGlyGluAsnIleSerGlyIleCysSerIle	3676 ACATATAATTOTCAGATACTTTGCGAAAAAGATACTAAAACATTTGGGCTGTTTGGAATT 3735	407 GlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHisAsnTyrLeuValPro 425	GGTAAATTTGTTAAAGATTATGGATATGTTTGGGATACCTATGATAATTATTTT	426 ThrVallysGinGlyAsnTyrAlaSerLeuLeuGluserThrSer	3790 TGCATAAGTCAGTATCTCAGAAGAATATCTGAAAATAAAT	441 ThrHistrpGlyPheValProValSerGlu 450
3328	295	3388	305	3445	322	3505	342	3535	366	3571	380	3616	394	3676	40.	3736	426	3790	443
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0. 441 ThrHistroClyPheValProValSerGlu 450 0. 3850 TGTANTGGCANTCCATTCCGTGATGATGATGATGCGTGATGATGATGCGTGATGATGATGCGTGATGATGATGCGTGATGATGATGCGTGATGATGATGATGATGCGTGATGATGATGATGATGATGATGATGATGATGATGATGA	Part John State St	TITE OF INTENTION Method and Compositions for the TITE OF INVENTION: Treatment of Pancreatitis FILE REFERENCE: 17282 CURRENT APPLICATION NUMBER: US/09/288,336
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CURRANY PAPLLACATION WORRER: 805/09/288,326 CURRENT FILING DAME: 1999-04-08 WUMBER OF SEQ ID NOS: 11 SOFTWARE: FEATSEQ for Windows Version 3.0 EREC ID NO: 10 LENGTH: 4835 : ORGANISM: Clostridium botulinum US-09-288-326-10 TYPE: DNA

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Alignment Scores: Pred. No.:

1.76e-56 586.50 48.94* 31.57* 24.53*

Length: Matches: Conservative: Mismatches: Indels: Gaps: Score:
Percent Similarity:
4
Best Local Similarity:
9
Query Match:
13

4835 82 82 1186 1186 JS-09-910-186A-10 (1-450) x US-09-288-326-10 (1-4835)

1883 ANTANTGATCCTGTATATATTAATCTAGTAGTTAAAATAAAGAATATAAGGATTA---- 3936

323 GlydlyaspileLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPhaMet

343 LysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGlyLeu 362

547 -----CATAGATATATITGGATAAATTTTAATCTTTT 3582 3583 GATAAGGAATTAAATGAAAAAGAAATCAAAGATTTATATATGATAATCAATTCAGGT 3642 9643 ATTTTANAAGACTTTTGGGGTGATTATTTACAATATGATAAACCATACTATATGTTAAT 3702 287 ::: ||||:::|||| 3762 1022 ATAGACITATCTAGGTATGCATCAAAAATAAATATTGGTAGTAAAGTAAATTTTGATCCA 3081 1187 AGCTTTTGGATAGAATTCCTAAGTATTTTAACAGTATAAGTCTAAATAATAATACA 3246 1247 ATANTARATTGTATGGARANTAATTCAGGATGGARAGTATCACTTAATTATGGTGAAATA 3306 SSO7 ATCTGGACTTTACAGGATACTCAGGAAATAAACAAAGAGTAGTTTTAAATACAGTCAA 3366 3867 ATGATTAATATGAGATTATATAAGAGAGATGGATTTTTGTAAGTATGACTAATAATAGA 3426 3427 TTABATARCTCTABARTITATATARATGGAAGRITAATAGATCABAAACGAATTTCABAT 3486 322 2962 TATATTAGAATATTATTAATACTICTATATTGAATTTAAGATATGAAACTAATCATTA 3021 157 SerAsnAsnAlaProGlyTyr---AsnLysTrpPhePheValThrValThrAsnAsnMet 175 MetGlyasnWetLysileTyrileAsnGlyLysLeuileAspThrileLysValLysGlu 195 196 LeuThrGlyileAsnPheSerLysThrileThrPhsGluileAsnLysIleProAspThr 215 216 GlyLeulleThrSerAspSerAspAsnIleAsnMetTrplleArgAspPheTyrilePhe 235 236 AlalysdluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 255 256 ValvaliyeAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsn 275 SerPherrpileArgileAsnLysTrpValSerAsnLeuPro------GlyTyrThr 116 117 ilelleaspSerValLysAsnAsnSerGlyTrpSerIleGlyIlelleSerAsnPheLeu 136 137 ValPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIle 156 23 TyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThrLeu 42 43 ValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnPro 62 63 IlePheProPheAsp-----PheLysLeuGlySerScrStUvGluAspArgGlyLys 79 80 valilevalThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerlle 99 288 ------ArgAsnIleValPheAsnThrArg---ArgAsnAsnAsnAspPheAsn 763 CITARAGGCCCIAGAGCIAGCGIAATGACIACAACATTTATTTAATTCAAGITTGTAT GludlyTyrLysTleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgValArg 276 IleAspTyrLeuAsnArgTyrMetTyrAlaAsnSer-----007 176

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[05] AACTICGICGCIAGCAAGACT-----CACTINITC-------CCATIAIAGCT 1092
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1132 TCCTCCTCTGCCAACAGATTTAACCAATGCGTCGTTATGAACTCCGTCGGTAACAACTGI 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          276 IleAspTyrLeuAsnArgTyrMet-----TyrAlaAsnSerArgGlnIleValPheAsn 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             294 Thrargargasn-----AsnasnaspPheasnGluGlyTyrLysIleIleIleLys 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              311 Argile --- ArgGlyAsnfhrAsnAspThrArgValArgGlyGlyAspIleLeuTyrPhe 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       330 AspMetThrileAsnAsnLysAlaTyrAsnLeuPheMetLysAsnGluThrMetTyrAla 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  350 AspAsnHisSerThrGluAspIleIyrAlaIleGlyLeuArgGluGlnThrLysAspIle 369
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   388 SerGinilePheLysSerAsnPheAsnGlyGluAsnIleSerGlyIlsCysSerIleGly 407
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                                                                                                                                                       298 ATCTCTCABAACGACTACATTATCTACGACAACAAGTACAAGAACTTCTCTATTCTTTC 357
                                                                                                                                                                                                                                   102 TrplleArgile-----AsnLysTrpValSerAsnLeuProGlyTyrThrile 117
                                                                                                                                                                                                                                                                                      358 TOGOTCAGGATTCCTAACTACGACAAGAACGTCAACGTTAACAACGAGTACATATC 417
                                                                                                                                                                                                                                                                                                                                                     118 IleaspSerValLys --- AsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeu 136
                                                                                                                                                                                                                                                                                                                                                                                     ATCAACTGTATGAGAGAGAACAACTCCGGTTGGAAGGTCTCTCTTAACCACAACGAGATC 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          478 ATTIGGACCTIGGAAGACAACGCAGGTATTAACGAAAGTTAGCATTCAACTACGGTAAC 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SerAsnAsnAlaProGlyTyr -- - AsnLysTrpPhePheValThrValThrAsnAsnMet 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAACGGTATTTCTGACIACATCAAGAAGTGGATTTTCGTCACTATCACTAACGACAGA 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MetGlyAsnMetLysileTyrileAsnGlyLysteuIleAspThrileLysValLysGlu 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    598 IINGGIGACTCIAAGCITIACAITAAGGIAACTIAATCGACCAAAAGICCAITITAAAC 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196 LeuThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThr 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      658 TIAGGTAACATTCACGTTTCTGACAACATCTTATTCAAGATCGTTAACTGCAGTTACACC 717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     216 GlyLeulleThrSerAspSerAspAsnIleAsnMetTrpIleArgAspPheTyrIlePhe 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256 ValVallysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsn 275
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                                                                                                                                                                      1276 ------TATACCACATGAGATCACCACCAGAGATCACCAATGGA 1311
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                                                                                                     424 ValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluSerThrSerThrHis--- 442
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Patent No. US20020107199A1
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236 AlalysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 255

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8878 ATTIGGACALTGCAGGAATTCAGGAATTAATCAAAATTAGCATTTAACTATGGTAAC 2937
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APPLICANT: Walker, Patricia
TILE OF INVENTON: Wethods of Administering Botulinum Toxin
FILE REPRENCE: 2930ZP
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Mismatches:
Indels:
                                                                                                         CORRENT APLICATION NUMBER: US_10/051,952
CORRENT TELING DATE: 2002-01-17
PRIOR APPLICATION NUMBER: 09/730,337
PRIOR FILTING DATE: 2007-12-05
NUMBER OF SEQ ID NOS: 12
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32.698
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US-10-051-952-6
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LENGTH: 3753
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3118 AGRIATATT ------GOTATIAGATATTTT 3150

216 GlyLeuIleThrSerAspSerAspAsnIleAsnMetTrpIleArgAspPheTyrIlePhe 235

3058 IINGGTAATATTCATGTTAGTGACAATATATTTAAAATAGTTAAITGTAGTTATACA 3117

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196 LeuThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThr

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3670 ....TATACACATATGAGAGATAATACAGG 3699
3151 GATAAAGAATTAGAAACAGAAATTCAAACTTALATAACAATGAACCTAATGCAAAT 3210
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                                                                                                                                                                                                                                                                                                                    276 Ile------AspTyrLeuAsnArgTyrMetTyrAlaAsnSerArgGlnIleVal 291
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Patent No. US2002010719981
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US-10-051-952-7
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974 AGAGAAGATATATCAGAGTATATAAATAGATGGTTTTTTGTAACTATTACTAATAAT--- 3030 176 MetGlyasnMetLysileTyrlleAsnGlyLysLeuileAspThrileLysValLysGlu 195 Conservative: Mismatches: Indels: US-09-910-186A-10 (1-450) x US-10-051-952-3 (1-3876) Length: Matches: 2396 GGTTGCTCATGGGAATTTATTCCTGTAGATGAT 2428 FILE REFERENCE: 2933CIP CURRENT APPLICATION NUMBER: US/10/051,952 CURRENT FILING DATE: 2002-00-17
PRIOR APPLICATION NUMBER: 09/730,237
PRIOR FILING DATE: 2000-12-05
NUMBER OF SEQ ID NOS: 12
SGTWARE: Patentin Ver. 2.1 Sequence 3, Application US/10051952 Patent No. US20020107199Al GENERAL INFORMATION: 9.996-54 561.00 50.218 32.858 23.46% ORGANISM: botulinum toxin Percent Similarity: Best Local Similarity: Alignment Scores: 3876 JS-10-051-952-3 US-10-051-952-3 IYPE: DNA LENGTH: gg 윱 g à 8 8 à à à ò à 910 TATGATCCAAATAAATATGTGGATGTAAATAATGTAGGTATTAGAGGTTATATGTATGTT 1969 2141 -----GCTACTANTGCATCAGGGGGGGGGGTAGAAAATACTAAGGC 2185 2186 TTAGABATACCTGATGTAGGABATCTAAGTCAAGTAGTAGTAATGAAGTCAABAAATGAT 2245 2246 CHAGGAATAACAAATAAATGC---AAAATGAATTTACAAGATAATAATGGGAATGATATA 2302 2303 GGCTTTATAGGATTTCATCAGTTT------AATAATATA 2335 461 ATAATAATTAGTATGGGAAAATTCAGGATGGAAAGTATCACTTAATTATGGTGAAATA 1520 1521 ATCTGGACTTTACAGGATACTCAGGAAATAAAACAAAGAGTAGTTTTTAAATAC---- 1574 1634 ANTARCICTARANTITATATARANTGGAAGATTAATAGATCAAAAAGCAATTTCAAATTTA 1693 1694 GGTAATATTCATGCTAGTAATAATATAATGTTTAAATTAGATGGTTGTAGAGATACA--- 1750 1790 haggarttaaatgaaaaagaaatcaaagatttatatgataatcaaattaggatatt 1849 850 TTARAGACTTTTGGGGTGATTATTTACAATATGATAACCATACTATATGTTAAATTTA 1909 2030 GOGACAAAITTATTATAAAAAATATGCTICTGGAAATAAAGATAATGTTATTTGTTAGAAAT 2089 1575 AGTCA-AATGATTAATATATCAACAGATGGATTTTTGTAACTATCACTAATAATAATAA 1633 196 LysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsnVal 256 277 AspTyrLeuAsnArgTyrMetTyrAlaAsnSer------287 ------ArgGlnIleValPheAsnThrArg---ArgAsnAsnAspPheAsnGlu 303 304 GlyTyrLysIleIleLleLysArgIleArgGlyAsnThrAsnAspThrArgValArgGly 323 324 GlyaspileLeuTyrPheaspMetThrileasnasnLysalaTyrasnLeuPheMetLys 343 344 AsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGlyLeuArg 363 384 TyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSerGLyIle 403 404 CysSerIleGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHisAsnTyrLeu 423 424 ValProThrValLysGlnGlyAsnTyrAlaSerLeuLeuGluserThrSer----- 440 117 IleileAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleileSerAsnPheLeu 136 137 ValPheThrieuLysGlnAsnGluAspSerGluGlnSerileAsnPheSerTyrAspIle 156 157 SerasnasnalaProGlyTyrAsnLysTrpPhePheValThrValThrAsnAsnMetMet 176 197 ThrGlylleAsnPheSerLysThrlleThrPheGlulleAsnLysIleProAspThrGly 216 LeulleThrSerAspSerAspAsnIleAsnMetTrpIleArgAspPheTyrllePheAla 236 VallysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIle 276 364 GluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGlnProMetAsnAsnThr 177 GlyAsaMetLysIleTyrIleAsnGlyLysLeuIleAspThrIleLysValLysGluLeu 2090 AATGATCGTGTATATATATGTAGTAGTTAAAAATAAAGAATATAGGTTA----441 ---ThrHisTrpGlyPheValProValSerGlu 450 237 257 1751 Expired from al 094 01 86500 05+05+2004 6 à 9 à å à a à 9 윱 e ò 8 à 9 ö

2734 ACTCARARICAGARIACATATARARGIGIGITACCITGAITTAGCGTAGCTITIGG 2793 2794 ATAAGAATACCIAAATATAAGAATGATGGTATACAAAATTATATATGATAATGAATATACA 2853 2506 ATGCCGTTTGATCTTCAATATATACCAATGATACAATACTAATAGAAATGTTTAATAAA 2565 2625 ATAGATITATCAGGATATGGGGCAAAGGTAGAGGTATATGATGGAGTCGAGCTTAATGAT 2685 2686 -----AAAAATCAATTTAAATTAACTAGTTCAGCA-----NATAGTNAGATTAGAGTG 2733 2854 ATAATTAATTGTATGAAAAATAATTGGGGCTGGAAAATATCTATTAGGGGTAATAGGATA 2913 83 ThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPheTrp 102 103 ileArgileAsniysTrp------ValSerAsnLeu-----ProGlyTyrThr 116 117 ilellaAspSerVallySAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeu 136 137 ValPheThrLeutysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIle 156 157 SerAsnAsnAlaProGlyTyr---AsnLysTrpPhePheValThrValThrAsnAsnMet 175 43 ValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnPro 62 3 IlepropheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspileIleAsnGlu 22 23 TyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThrLeu 42 63 IlePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysVallleVal APPLICANT: Walker, Patricia TITLE OF INVENTION: Methods of Administering Botulinum Toxin 3876 159 84 173 68

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3424 GGAGABARATTTATTATATAGBAGA---BAGTCBARTTCTCBARTCTATABATGATGATATA 3480
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                                              8091 ATAAGAGAGTTATTGCTAATGGTGAAATAATATTTAAATTAGAT------3135
                                                                                                                                  3136 -------GGTGATATAGARACACAATTTATTGGARGAATATTGGATGAATATTGAGGATT
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                                                                                        216 GlyLeulleThrSerAspAsnileAsn---MetTrpileArgAspPheTyrile 234
                                                                                                                                                                        235 PhealaLysGluLeuAspGlyLysASpIleAsnIleLeuPheAsnSerLeuGlnTyrThr 254
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196 LeuThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLysIleProAspThr 215
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U.S. Army Medical Reseach Institute for Infectious Diseases John S. Lee Getz Pushko

Sequence 1, Application US/09350756 Patent No. US20020034521A1

GENERAL INFORMATION: APPLICANT: U.S. Army RESULT 13 US-09-350-756-1

APPLIANT JOHN S. Lee
APPLIANT HELE PUBLE
APPLIANT HITMED D. Parker
APPLIANT JOHNED D. Parker
APPLIANT JOHNED D. Salth
APPLIANT MARK T. Dertabugh
APPLIANT HER T. Dertabugh
APPLIANT HEN T. Bertabugh
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APPLIANT HEN THE SEATH

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; OTHER INFORMATION: /note="synthetic sequence encoding botulinum neurotoxin" US-09-356-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93 MetTyrGluSerPheSerlleSerPheTrplleArglleAsnlysTrpValSerAsnLeu 112
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Mismatches:
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Matches:
CUSRENT APPLICATION WOMER: US_005_75
CUSRENT FARFACKATION WOMER: US_005_75
EARLER FILING PARE: 109_007_10
BARLER FILING PARE: 109_007_10
WINDER: 0F SEQ. DO NOS: 110
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Best Local Similarity:
Query Match:
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3 ileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspileIleAsnGlu 22

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4	op qq	699 GACAAACCAGTCCTGGTATCCTGAAAGACTTCTGGGGTGACTACCTGCAGTACGAC	75
0	26	269 Lysdlutyrtyrmetvalasnileasptyrleuaanargtyrmettyralaanser	
1	7.	759 AAACOGIACTACAIGCIGAAICIGTACGAICCGAACAAIACGIIGACGICAACAAIGIA	8.1
U	25 VG	288ArgGlnIleValPheAsnThrArg	- 29
н	- R	819 GGTATCCGCGGTTACATGTACCTGAAAGGTCCGCGTGGTTCTGTTATGACTACCAACATC	871
0	22	296 ArgAsnAsnAspPheAsnGluGlyTyrLysIleIleIleLieLysArgIleArgGlyAsn	31
н	.8 Q	879 TACCTGAACTCTTCCCTGTACCGTGGTACCAAATTCATCATCAACAAAAAAGGCGTCTGG	66
I STATE		316 ThrashaspThrargValargGlyGlyAspIleLeuTyrPheAspNetThrIleAshAsh	333
-4-		939 AACAAGGACAATATGGTTGGCAACAATGATGGTGTATACATGAATGTTGTAGTTAAGAAG	66
annar		LysalaTyrasnLeuPheMetLysasnGluThrMet	
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	н	035 GGTGTAGAAAAATCTTGTCTGGAAATCCCGGAAGTTGGTAATCTGTCTCAGGTA	10
		376 GinileGinProMetAsnAsnThrTyrTyrTyrAlaSerGinIlePheLygSerAsnPhe	33
-		1095 GTTGTAATGAAATGCAAGAAGGACGAGGGTATCACTAAGAATGGAAAATGAATCTG	3 11
040	~) a (396 AsnGlyGluAsnIleSerGlyIleCysSerIleGlyThrTyrArgPheArgLeuGlyGly	4 4
-		1152 CAGGACAACAATGGTAACGATATCGGTTTCATCGGTTTCCACCAGTTC	Ξ,
~	86	416 AspTrpTyrArgHisAsnTyrLeuValProThrValLysGlnGlyAsnTyrAlaSerLeu	u 43
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-	, ORG US-10-0	ORGANISM: botulinum toxin 10-051-952-1	
~ -	Alignment Pred. No.	Scores: 7.13e-53 Length:	
-, -	Score:	553.50 Matches:	
	Best Lo	Best Local Similarity: 30.93% Mismatches: 189	
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7.13e-53 553.50 48.318 30.938 23.158 Query Match: DB: JS-09-910-186A-10 (1-450) x US-10-051-952-1 (1-3891)

Length: Matches: Conservative: Mismatches: Gaps: Gaps:

3891 146 82 82 1189

9526 AATAATGAICGIGIAIATATATATGIAGTIAAAAAIAAAGAAIAIAAGGIIA----- 3579

2725 ATAGATAAAAATCAAATTCAATTATTTAATTTAGAAGTAGT------AAA 2769 3130 TTAGGTAATATTCATGCTAGTAATAATATAATGTTTAAATTAGATGGTTGTAGAGATACA 3189 1190 -----CATAGATATATTTGGATAAATATTTTAATCTTTT 3225 3226 GATANGGAATTAAATGAAAAGGAATCAAAGATTTATGATAATGAATCAATTCAGGT 3285 3348 ATTITARAGACTITIGGGGTGATIATITACAATATGATAAACCATAGTATATGTTAAA 3345 466 AGGGGGCACAAATTTATTATAAAAATATGCTTCTGGAAATAAAGATAAGATAATATTGTTAGA 3525 2545 ATACCITITCAGCITICCAAAIAGGIAGAIAAICAAAGAITAITAICIACAITITACIGAA 2604 1665 ATAGACITATCIAGGIATGCAICAAAAATAAATATTGGIACTAAAGIAAATTTTGAICCA 2724 2770 ATTGAGGTAATTTTAAAAAAGCTAFTGTATATAATAGTAFGTATGAAAATTTTAGTACT 2829 8830 ACCTITIGGALAAGAATICCIAAGIALITITAACAGIATAAGICTAAAIAATGAATAACA 2889 2950 ATCTGGACTTTACAGGATACTCAGGAAATAAAACAAAGAGTAGTTTTTAAATAGAGTCAA 3009 8010 ATGATTAATATATGAGATTATATAAACAGATGGATTTTTGTAACTATCACTAATAATAGA 3069 3346 TTATATGATCCAAATAAATATGTCGATGTAAATAATGTAGGTATTAGAGGTTATATGTAT 3405 2605 TATATTAAGAATATTATTAATACTICTATATTGAATTTAAGATATGAAAGTAATCATTTA 2664 137 ValPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIle 156 196 LeuThrGlyIleAsnPheSerLysThrIleThrPheGluileAsnLysIleProAspThr 215 236 AlanysGluLeuAspGlyLysAspIleAsnIleLeuPheAsnSerLeuGlnTyrThrAsn 255 256 ValValLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsn 275 303 GludlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgValArg 322 63 IlePheProPheAsp-----PheLysLeuGlySerSerGlyGluAspArgGlyLys 79 80 ValileValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIle 99 117 IlelleAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeu 136 TyrPheAsnAsn1leAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThrLeu 42 43 ValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsnPro 62 323 GlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPheMet 157 SerAsnAsnAlaProGlyTyr --- AsnLysTrpPhePheValThrValThrAsnAsnMet 216 GlyLeuileThrSerAspSerAspAsnileAsnMetTrpIleArgAspPheTyrllePhe 276 IleAspTyrLeuAsnArgTyrWetTyrAlaAsnSer-----100 SerPheTrpIleArgIleAsnLysTrpValSerAsnLeuPro------GlyTyrThr 23 g g 음 a 윱 g õ ð 용 a ò 8 à a à a à a à a à 셤 à g ò à õ å

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SerGlyGluAspArgGlyLysValIleValThrGlnAsnGluAsnIleValTyrAsnSer 92
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1225 AAGTANTIGGTATAATAGACAAATAGAAAGATCTAGGACTTTGGGTTGCTCATGGGA 1284 -----ThrHisTrpG1 444

Search completed: November 7, 2002, 20:06:56 Job time: 86 secs

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Listing first 45 summaries
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Xgapop 10.0 , Xgapext
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SECTIVARY: FastSEQ Cor Mindows Version 4.0 SEQ IND 1371 GREATER 1371 GREATER ATTHICASA Sequence FORTH FOR THE CONSTRUCT CONSTR	Autignment Scotes: 4.07e-20 leagth: 137] Scote Control of Control	Oy 1 Methnilopophaanilehopopaanilehopophaa				O 9 16 prod.protection protection in the control protection to the con	0y 20 Presentyerholterium/hebrolinia-bandyailervokerholterium/hebro 20 b 60 Trichtona-bandrocherholterium/hebrolinia-bandyailer-band
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THEN INFORMATION: Symmetric construct based on Clostridium botulinum HER INFORMATION: Sequence MACKET: CDS ACKLON: (LO) ...(1359) $10-1864-9
GANISM: Artificial Sequence
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	4.07e-230 Length:	2391.00	100.00% Conservative:	100.006	100.004	34 Gaps: 0	
SALAMINEN SCOT SE	Pred. No.:	Score:	Percent Similari	Best Local Simil	Ouery Match:	DB:	

t Similarity: ent Scores: No.:

1 MetThrileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspilelle

130 ACCTTGGTCGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCGAGCTG 61 AsnprollePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysVal 41 ThrLeuValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeu

369

141 LysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSerAsnAsnAla 160

609

241 GlyLysAspileAsnileLeuPheAsnSerLeuGlnTyrThrAsnValValLysAspTyr

26] TrpGlyAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIleAspTyrLeuAsn 280

LENGIH: 1371

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IYPE: nucleic acid
STRANDEDNESS: double
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Best Local Similarity:
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190 IGGGGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATGGACTACTTGAAC 849
                                                                                                                                                                             301 PheksnGluGlyTyrLysileileileLysArgileArgGlyAsnThrAsnAspThrArg 320
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                                                         181 ArgTyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAsnAsp
                                                                                                350 AGATACATGTTACGCCAACTCCAGACAGACGTCTTCAACAACAACAACGAC
                                                                                                                                                                                                                                             TTCAACGAGGGTTACAAGATCATCATCAAGGTATCAGAGGTAACACCAACGACCAGA
                                                                                                                                                                                                                                                                                                       321 ValArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeu
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COMMUTER: IRM Competible OS
OPERATURE SYSTEM: COCOS/MS.COS
SOFWARE: PARENTIN RELEASE #1.0, Version #1.30
UGUREWA PAPICARION DURBER: PCT/USS//15394
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NAME: INGOILS, Diane E.
REGISTRATION NUMBER: 40,027
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TELEPHONE: (415) 705-8410
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TELEFAX: (415) 397-8338
TNFORMATION FOR SEQ ID NO: 59:
SEQUENCE CHARACTERISTICS:
LENGTH: 3876 base pairs
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2527 ACAATACCCITTAATATTTTTCATATACTAATAATTCTTTATTAAAAGATATAATAAAT 2586
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          182 TyrileAsnGlyLysLeulleAspThrileLysValLysGluLeuThrGlyIleAsnPhe 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       222 SerkspasnileasnMetTrpileArgAspPheTyrilePheAlaLysGluLeuAspGly 241
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                                                                                                                                                                                                                                                                                                                                                     22 GluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThr 41
                                                                                                                                                                                                                                                                                2 ThrileProPheAsnIlePheSerTyrThrAsnAsnSerLeuLysAspTleIleAsn 21
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Conservative:
Mismatches:
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2386.00
100.00%
100.00%
99.79%
MOLECULE TYPE: DNA (qenomic)
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262 GlyAsnAspLeuArgFyrAsnLysGlufyrTyrMetValAsnlleAspTyrLeuAsnArg
TYPE: nucleic acid
STRANDEDNESS: double
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3307 GGAAATGATITAAGATATAAAGAATATTATATGGTTAATAGAITATTAGATTAATAGA 3366
                                                                                                           3427 ANIGAAGGATATANAATTATAATAAAAAGAATCAGAGGAAATACAAATGCAAATGCTAGAGTA 3486
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                                                                       282 TytMetIyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAspPhe 301
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APTICANT: Thalliams, James A.
APTICANT: Thalliams, James A.
TITLE OF INVENTIONS MILLIVALENT VANCIOR FOR CLOSTISIUM
TITLE OF INVENTIONS BELLIAMS MOUTCOOKIN
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220 Montgomery Street, Suite 2200
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/704,159
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
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NAME: Ingolla, Diane E.
REGISTRATION NUMBER: 40,027
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TELECOMMUNICATION INFORMATION:
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TELEPAX: (415) 77-8338
INFORMATION FOR SEQ ID NO: 59: SEQUENCE CHARACTERISTICS:
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Matches:
STRANDEDNESS: double
TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
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322 ArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPhe 341
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                                                                            282 TyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAsnAspPhe
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DATABASE ACCESSION NUMBER: GeneBank / X72793
DATABASE ENTRY DATE: 1993-05-03
RELEVANT RESIDUES: 3 TO 3876
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3427 AATGRAGGATATAAAATTATAATAAAAGAATCAGAGAAATACAAATGATACTAGAGTA 3486
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Matches:
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2587 GANTATTICAATATATTAATGATTCAAAAATTTTGAGCCTACAAAAGAGAGAAAAAATACT 2646
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                                                                               Length:
Matches:
Conservative:
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                      3487 CGAGGAGGAGATATTTTATATTTTGATATGACAATTAATAACAAGGCATAJAATTTGTTT 3546
                                                                                                                             3667 AATACITATTATTACGCATCTCAAATATTJAAATCAAATTTTAATGGGGAAAATATTTCT 3726
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                                                                                                                                                                                                                                                                                      382 AsnThrTyrTyrTyrAlaSerGlnIlePheLysSerAsnPheAsnGlyGluAsnIleSer 401
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TITLE OF INVENTION: Multivalent Vaccine For Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TTPE: FROPPY disk
COMPUTER: MR PC COMPALIDA
OVERNITA STEPRO PC-1005/MS-DOS
SOFFWARE: Perentin Release #1.0, Version #1.30
FILIAN PRILOXITOR WOMEN: US-102/271.012
FILIAND DATE: 10-012/2012/271.012
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ADDRESSEE: Medlen & Carroll
STREET: 220 Wongemery Street, Suite 2200
CITY: San Francisco
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE: California
COUNTRY: United States of America
ZIP: 94104
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LOCATION: 1.,3873
SEQUENCE DESCRIPTION: SEQ ID NO: 59:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               442 HisTrpGlyPheValProValSerGlu 450
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REGISTRATION NUMBER: 40,027
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TELEPHONE (415) 705-6410
TELEPHONE (415) 397-838
INPORMATION FOR 820, ID NO: 59:
SEQUENCE CHRANCHERISTICS:
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             322 ArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPhe 341
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                          3487 CGAGGAGGAGATAITITATATTITGATATGACAATTAATAACAAAGCATATAATTIGTTT
                                                    5547 ATGRAGAATGAAACTATGTATGCAGATAATCATAGTACTGAAGATATATGCTATAGGT
                                       342 MetLysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGly
                                                                  362 LeuArgGluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGlnProMetAsn
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Matches:
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OTHER INFORMATION: 6-histidine tag
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LOCATION: (3886)..(39
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Best Local Similarity:
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519 Takokascaakokakogarraantokarattarraturrokaarrokadokat 3678
519 Trakokascaakokakogarraantokataattarraturraturrokaarrakadokat 3678
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GluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThr 41
                                                                                         ValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe
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2738 CCANTAITICCALTIGACTITAAATTAGGTAGTICAGGGAGGATAGAGGTAAAGTTATA 2797

62 ProllePheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile 82 ValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerIleSerPhe 102 TrpileArgileAsnLysTrpValSerAsnLeuProGlyTyrThrileIleAspSerVal 122 LysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuvalPheThrLeuLys 142 GlnAenGluAepSerGluGlnSerIleAenPheSerTyrAepIleSerAsnAsnAlePro 2978 CMAMATGAAGATAGTGAACAAGTATAAATTTTTAGTTATGATATGAAATAATGCTCCT 162 GlyTyrAsnLysTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMetLysIle 182 TyrileAsnGlyLysLeuileAspThrileLysValLysGluLeuThrGlyIleAsnPhe 202 SerlysThrIleThrPheGlulleAsnlysIleProAspThrGlyLeulleThrSerAsp SerAsphanilehanMetTrpileArghapPheTyrilePheAlaLysGluLeuAspGly

LeuValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn

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1158 ACCARACTATAGATITGANATAANIAAATICCAGATAGGGGTTTGATTACTICAGAI 3217

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3739 GGAATATGTTCAATAGGTACTTATGGTTTAGACTTGGAGGTGATTGGTATAGACACAAT 3798
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GURRALL FUNDWARTOR STATEMENT STA
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382 AsnThrTyrTyrAlaSerGlnIlePhaLysSerAsnPheAsnGlyGluAsnIleSer
                                                          3679 ANTRCTTATTATTACGCATCTCAAATATTTAAATCAAATTTTAATGGAGAAAATATTTCT
                                                                                                                     402 GlylleCysSerlleGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHisAsn
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: WINDOWS FOR WORKGROUPS
SOFTWARE: WORDPERFECT 5.1
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REGISTRATION NUMBER: 32,
REFERENCE/DOCKET NUMBER:
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APPLICATION NUMBER: US/
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT
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278 AAAGATATTAATATTTAATTTAATAGCTTGCAATATGCTAATGTTGTAAAAGATTATTGG 3337 1398 TATATGRANGGRACTCACGACAAATGTTTTAATACACGTAGAAATAATAATGACTTC 3457 458 AATGAAGGATATAANATTATAATAAAAAGAATCAGAGGAATACAAATACAAATGCTAGAGTA 3517 282 TyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAsnAspPhe 301 302 AsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgval 321 MetLysAsmGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGly 361 362 LeuargGluGlnThrLysAspIlaAsnAspAsnTleTlePheGlnIleGlnProMetAsn 262 GlyksnAspleuArglyrAsnLysGluTyrTyrWetValAsnIleAspTyrLeuAsnArg 242 LysAspileAsnileLeuPheAsnSerLeuGlnTyrThrAsnValValLysAspTyrTrp 322 ArgGlyGlyAspIleLeuTyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPhe 3638 à 8 à g à a ò g à g ð g ð 2558 ACANTACCOTTTAANNTTTTTCANATACTAANTAATTCTTTAANAGATAATTAAT 2617 2 ThrileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspileIleAsn 21 Length: Matches: Conservative: Mismatches: US-09-910-186A-10 (1-450) x US-08-954-302-2 (1-3950)

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US-08-954-302-2 LENGTH:

TELEPHONE: (609) 779-2400
TELEPAX: (609) 810-1454
INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS:

NUCLEIC ACID

TYPE

TOPOLOGY: LINEAR ANTI-SENSE: NO

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AspasnThrTyrTyrTyralaSerGlnllePheLysSerAsnPheAsnClyGluAsnIle 400
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    3818 TATETIGGIGCCTACTGIGAGCAAGGAATTATGCTTCATTATTAGAATCAACATCAACT 3877
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242 LysaspileasnileLeuPheasnSerLeuGlnTyrThrasnValValLysaspTyrTrp 261
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US-10-051-952-4
; Sequence 4, Application US/10051952
; GEMERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity:
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Best Local Similarit
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
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DB:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1127 AGGAAAACTATAACATTTGAAATAAATAAATTCCAGATACCGGTTTGATTACTTCAGAT 3186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2587 GAATATTTCAATAATATTAATGATTCAAAATTTTGAGCCTACAAAACAGAAAAATACT 2646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               82 ValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSerTleSerPhe 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142 GlnAsnGluAspSerGluGlnSerIleAsnPheSerTyrAspIleSerAsnAsnAlaPro 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182 TyrileAsnGlyLysLeuileAspThrileLysValLysGluLeuThrGlyIleAsnPhe 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerLysThrlleThrPheGluIleAsnLysIleProAspThrGlyLeuIleThrSerAsp 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SeraspasnileasnmetTrpileargaspheTyrilePhealaLysGluLeuaspGly 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         102 TrpileArgileAsnLysTrpValSerAsnLeuProGlyTyrThrileIleAspSerVal 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     162 GlyTyrasnLysTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMetLysIle 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 ProllepheProPheAspPheLysLeuGlySerSerGlyGluAspArgGlyLysValile 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 ThrileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspileIleAsn 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22 GluTyrPheAsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLysAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2767 GTAACCCAGAATGAAATATTGTATATATTCTATGTATGAAAGTTTTAGCATTAT
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Sequence 4. Application US/09730237
GENERAL INFORMATION: Particla
APPLICART: Walker, Patricla
TITLE OF INFORTUNE WARDOMS Of Treating Hyperhidrosis
FILE REPRENCE: 2933
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Matches:
Conservative:
Nismatches:
Indels:
                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/730,237
CURRENT FILING DREE: 2000-12-05
NUMBER OF SEQ. ID NOS: 12
SOFTWARE: PATENTIN VET. 2.1
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2364.00
99.558
99.558
29.258
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Accord. No.:
Corcent Similarity:
Ant Local Similarity:
Corc Match:
                                                                                                                                                                                                                                                                                                                                   ENGTH: 3876
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3557 AATACITAITAIGGCAICICAAAIAIITAAAICAAAITITAAIGGAGAAAAITITCI 3726
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                                                                                                                                                                                                                                                                                               3787 TATTIGGIGCCTACIGIGAGCAAGCAATTATGCTICATTATAGAATCAACATCAAT
                                                                                                                                                                       GlylleCysserlleGlyThrTyrArgPheArgLeuGlyGlyAspTrpTyrArgHisAsn 421
                                                                                                                                                                                                                                                                  422 TyrLeuValProThrValLysGlnGlyAsnTyrAlaserLeuLeuGluSerThrSerThr 441
362 LeuargGluGlnThrLysAspIleAsnAspAsnIleIlePheGlnIleGlnProMetAsn 381
                                                                                           382 AsnthrryrryrryralaserGlnIlePheLysSerAsnPheAsnGlyGluAsnIleser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Williams, James A. APPLICANT: Thalley, Bruce S. TITLE OF INVENTION: Multivalent Vaccine For Clostridium TITLE OF INVENTION: Botulinum Neurotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1502
439
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SOFTWARE: Patentin Release #1.0, Version #1.30
CORRENT APPLICATION DATA:
APPLICATION WIMBER: PCT/US97/15334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches:
Indels:
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220 Montgomery Street, Suite 2200
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Matches:
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                                                                                                                                                                                                                                                                                                                                                              442 HisTrpGlyPheValProValSerGlu 450
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 61, Application PC/TUS9715394
GENERAL INFORMATION:
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NAME: Ingolia, Diane E.
REGISTRATION NUMBER: 40.027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : Floppy disk
IBK PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: OF
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (415) 397-8338
INPORATION FOR SEQ ID NO: 61:
SEQUENCE CHARACTERISTICS:
LENGIH: 1502 base pairs
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EDNESS: double
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/REY: CDS
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PCT-US97-15394-61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
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                                                                                                         TCTGATAACATCAATATGTGGGATAAGAGATTTTATATATTTGCTAAAGAATTAGGT 3246
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGAAGGATATAAAATTATAAAAAGAATCAGAGGAAATACAAATGATACTAGAGTA 3486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2527 ACANTACCCITTRAINITITICATATACTANATACTITATTANANGATATANI 2586
                                                                                                                                                                                                                                               2647 TIAGIGGAIACAICAGGAIAIAAAIGCAGAAGIGAGIGAAGAAGGCGAIGIICAGCIIAAI 2706
                                                                                                                                                                                                                                                                                                                                      707 CCAATAITICCATITGACTITAAATTAGGTAGTICAGGGGAGGATAGAGGTAAAGITATA 2766
                                                                                                                                                                                                                                                                                                                                                                                                              2827 TGGATTAGAATAAATAAATGGGTAAGTAATTTACCTGGATATATACTATAATTGGTGTT 2886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGATAGAATAAATGGTTTTTTGTAACTGTTACTAACAATATGATGGGAAATATGAAGATT 3066
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgVal 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           322 ArgGlyGlyAspIleLeuTyrPheAspKetThrIleAsnAsnLysAlaTyrAsnLeuPhe 341
                                                                                                                                                                                                                                                                                                                                                                                 ValThrGlnAsnGluAsnIleValTyrAsnSerWetTyrGluSerPheSerIleSerPhe 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TrplleArgileAsnLysTrpValSerAsnLeuProGlyTyrThrileIleAspSerVal 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LysasnAsnSerGlyTrpSerIleGlyIleIleSerAsnPheLeuValPheThrLeuLys 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GlyTyrAsnLysTrpPhePheValThrValThrAsnAsnMetMetGlyAsnMetLysIle 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SeraspasnileasnMetTrpIleargaspheTyrIlePheAlaLysGluLeuAspGly 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242 LysaspileasnileLeuPheasnSerLeuGinTyrThrasnValValLysaspTyrTrp 261
                                                                                                                                                                                                    42 LeuValAspThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGlnLeuAsn 61
                                                                                                                                                                                                                                                                                          ProllePheProPheAspPheLySLeuGlySerSerClyGluAspArgGlyLySValile 81
                       ThrileProPheAsnilePheSerTyrThrAsnAsnSerLeuLeuLysAspTleIleAsn 21
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US-09-910-186A-10 (1-450) x PCT-US97-15394-61 (1-1502)

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TTLE OF INVENTION: Multivalent Vaccine For Clostridium
TTTLE OF INVENTION: BOtolinum Neurotoxin COMPTIES REMAILE PORTS
MEDIUM TYPE: Floppy disk
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COMPATIL STREET: 220 Montgomery Street, Suite 2200 Length: Matches: Conservative: Mismatches: OPHD-02304 PRIOR APPLICATION DATA: APPLICATION NUMBER: US/08/704,159 United States of America ID NO: 61 CORRESPONDENCE ADDRESS: ADDRESSEE: Medlen & Carroll REGISTRATION NUMBER: 40,027 <Unknown> TELEPHONE: (415) 705-8410 TELEPAX: (415) 597-8338 INFORMATION FOR SEQ ID NO: 61: SEQUENCE CHARACTERISTICS: TELECOMMUNICATION INFORMATION: REFRENCE/DOCKET NUMBER: Sequence 61, Application US/10271012 GENERAL INFORMATION: APPLICANT: Williams, James A. FILING DATE: 15-Oct-2002 CLASSIFICATION: <Unknown LENGTH: 1502 base pairs TYPE: nucleic acid STRANDEDNESS: double 1472 GGGTTTTGTACCTGTAAGTGAA 1493 TOPOLOGY: linear MOLECULE TYPE: DNA (genomic) ATTORNEY/AGENT INFORMATION: NAME: Ingolia, Diane E. 443 oGlvPheValProValSerGlu 450 FILING DATE: <Unknown> SECUENCE DESCRIPTION: SEC CITY: San Francisco STATE: California 108..1493 8.09e-223 2319.00 98.66% 97.99% California NUMBER OF SEQUENCES: NAMB/KEY: LOCATION: COUNTRY: Alignment Scores US-10-271-012-61 18-10-271-012-61 ... 00

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apie	91ASS@RMETTYFOLDERPPASSETILESSEPPASSETILESSEPPASSETILES FOR STANDING 107	Db 2272 TTAMAMAGGGTCANTANT 2289
ed f	108 TrpValSerAsnLeuProGlyTyTThrileIleAspSerValLysAsnAsnSerGlyTrp 127	RESULT 2 US-10-032-411A-879 ; Sequence 879, Application US/10092411A
ron	128 SETIESTIESTE SERVERENTERFERENTERFEE	Granded Liver Control Liver Control Liver Control Control Liver Control Control Liver Control Contro
181	1459 AGCSTAGAGGGCTATTCAAATTCAGTAGAGTTTTGGCTAAATAATGAATATACATCGTTG 1518	FILE REPERENCE: 03796-101 CURRENT APPLICATION NUMBER: US/10/092,411A
09	141LysGlnAgnGluAsp	CURRENT FILING DATE: 2002-03-07 F RICH APPLICATION NUMBER: US 09/134,001 PRICE FTING NATE: 1968-13
10	153 SerTyrAspileSerAsnAsnAsnAsnAsnAsnLysrtpDhepheyalthrvalthr 172	PRIOR FILING DATE: 1997-11-08
18		PRIOR APPLICATION NUMBER: US 60/055,779 PRIOR PLIAD DATE: 1997-08-14
60	173 AsnAsnMetMetGlyAsnMetLysileTyrileAsnGlyLysLeuIleAsp 189	SEQUENCY 399 IN MOST 3010
n I	15/7 TGCAATTTTTCTATGATAAAGATGTTATGGTCATAGCAAATACTAATACTGGAGTAGAG 1885) TYPE: DNA) ORGANISM: Staphylococous epidermidis
05	190 VALLARLYWALLDSGLULGUTTIOLYILENSDPTREGELLYSTATILENGLILLE 209 1687 ANIMITARARGARAN	
-0:	210 AsniysileProAspThrGlyLeuileThrSerAspSerAspAsnileAsnMetTrplle 229	0.000521
5a ;	1735 TCTAAATTTTTATATAATGATAAAGAAAGTATGACTTGTTAATA 1779	Mismatches: Indels:
200	230 ArgAspPheTyrIlePheAlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsn 249 1780 ATGAT	6 Gaps: 0) x US-10-092-411A-879 (1-400
4 3 8	250 SetieucinTytThrhanValvaluyakapTytTrpClyAenAapTytRacLyg 269	Qy 10 Tyrthrasnananserteureuryangtleilebandlutyr?bebanantlebanag 29 11
è 8	270 GIUTYTYYWEVALABILEASPTYLEAUSONIGTYKRETYYNIASD 286	Oy 30 SetLysileLeuSerLeuGlnAsnArgiyAAAnThrLeuValAsphiserClyfyrAan 49 Db 2749 ACCOMINGTACTRCARGANGSAACBAACHARTH ::: 2790
5 G	28) SerargdinilevalbhekenbhrargargksnäsnäspäpekenGludlyyytiys 306 1927 TCAAAAAANATO- 1927 TCAAAAAAAAAAC- AACGAACTAATOTATOTATOTATOTATOTATOTATOTATOTATO	dy 50 AlaGluvalserGludludlyAspValchineuwsnProzlaPterFroPhelys 69 Db 2791
ò	ilellelleLysArgileArgGlyAsnThrAsn	
8	1963CGAACTAAAAAIGATTTA 1983	Db 2827 ATGGGAAAACAACTCAGTCTATAGGTAAATATTCAGTAAAAACCTACAAATAATGGTCTA 2886
o d	327 Leufytphaspweithteankanniyaklatyrasheuphakeityssendluth: 346	dy 90 Tyradestherity:

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9 GLUSSETPHOSETTI SERFERETTI LANGITUDA SELECTROPIA DE 2017 DAGOZITHA CHECALAGORIA DE 2017 DAGOZITHA CHECALAGORIA DE 2017 DAGOZITHA CHECALAGORIA DE 2017 DAGOZITHA CHECALAGORIA DE 2018 TRANCITURA CHECALAGORIA CHECALAGORIA DE 2018 TRANCITURA CHECALAGORIA	

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1603 CCATATATTATAAGTTATTAGTAAATATGACCCTAATAAGGACGATTACAGGACGATA 1662 .663 CAGCAAACTGTGACAATGCAAACGACTATAAATGAGTATACTGGTGAGTTT----- 1713 1761 1762 CAAGGACAAGGIGACTIGCCIGCIGAAAAAGCITATAAAITGGGAGAITACGTAIGGGAA 1821 1129 GATAAATATGAAAATATTAAAGCGCACCTTAAATTAACATCATACATTGATAAATCAAAG 1188 1189 GTTCCAAATAATAACACTAAGTTAGATGTAGAATATAAGACGGCCCTTTCATCAGTAAAT 1248 1249 -----AMANCANTIACGGTIGAATATCAAAAACCTAACGAAAATCGGACTGCTAACCTT 1302 1303 CAAAGTATGTTCACAAACATAGATACGAAAAACCATACAGTEGAGGAAAGGATTATATT 1362 1363 AACCCTCTTCGTTATTCAGCCAAAGAA-----ACAAATGTAAATATTTCAGGGAAT 1413 1414 GGCGATGAAGGTTCAACAATTATCGACGAT-----AGTACAATCATTAAAGTTTATAAG 1467 1468 GTIGGAGATAATCAAAATTTACCAGATAGTAACAGAATTTATGATTACAGTGAATATGAA 1527 1555 -----TTAGGAATAATAATGAGGTGAATATTAATTTTGGTAATATATATGTGA 1602 1069 GCTBGBGGTBGTTBTGBGCBBGBGABTBABABABATTBGCTBGACTTTTBCBGBTTBJGTB 1128 250 SerLeuGlnTyrThrasnValValLysAspTyrTrpGlyAsnAspLeuArgTyrAsnLys 269 270 GlufyrfyrMetValAsnIleAspTyrLeuAsnArg---TyrMetTyrAlaAsnSerArg 288 289 GluileValPheAsnThrArgArgAsnAsnAsnAspPheAsnGluGlyTyrLysIleIle 308 309 IleLysArglleArgGlyAsnThrAsnAspThrArgValArgGlyGlyAspIle---- 326 327 LeuTyrPheAspMetThrile-----AsnAsnLysAlaTyrAsnLeuPhe 341 342 MetLysAsnGluThrMetTyrAlaAsp---AsnHisSerThrGluAspIleTyrAlaIle 360 379 ------ProMetAsnAsnThrTyrTyrTyrAlaSerGlnIlePheLys 392 150 ileAsnPheSerTyrAspIleSerAsnAsnAlaProGlyTyrAsnLysTrpPhePheVal 169 184 ------AsnGlyLysLeuIleAspThrIleLysValLysGluLeuThrGlyIleAsn 200 201 PheSerlysThrIleThrPheGluIleAsnLysIleProAsp-----ThrGlyLeuIle 218 -MetTrbIle 229 230 ArgAspPheTyrilePheAlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsn 249 361 GlyLeuArgGluGlnThrLysAspileAsnAspAsnIleIlePheGlnIleGln----1714 ------AGAACAGCATCCTATGATAATACAATTGCTTTCTCTACAAGTTCAGGT 170 ThrValThrAsnAsnAshActGlyAsnActLysile-----Tyrile-----219 ThrSerAspSerAspAsnIleAsn--Espied from \$1 894 01 868 on 052-05\$ 20048 셤 g ò 6 à ò

1822 GAIGTAGATAAAGATGGTATTCAAAATACAAATGATAATGAAAAACCGCTTAGTAATGTA 1881 393 ------SerAsnPheAsnGlyGluAsnIleSerGlyIle 403 1882 ITGGTAACTITGACGTAT 1899 404 CysSerIleGlyThrTyr 409 US-10-092-411A-1838 ò 유 ò

2076 116 84 218 33 Length: Matches: Conservative: Mismatches: Indels: PRIOR APPLICATION WROMER: US 09/134,001
PRIOR FILING DRIE: 1998-09: 10
PRIOR FILING DRIE: 1999-01: 10
PRIOR FILING DRIE: 1999-11: 10
PRIOR FILING DRIE: 1999-08: 14
PRIOR RIEDRICATION WROMER: 1999-08: 14
NOMER: 05: 500-11 ; ORGANISM: Staphylococcus epidermidis US-10-092-411A-1838 CURRENT FILING DATE: 2002-03-07 117.00 33.50% 19.43% Percent Similarity: Best Local Similarity: Alignment Scores: 2076 SEC ID NO 1838 LENGTH: 2076 Ouery Match:

13 AIGTCAATACCAATTAATTIA -----CCTACAAACAGTACTAIGATTAATGAATTAIGT US-09-910-186A-10 (1-450) x US-10-092-411A-1838 (1-2076) 1 MetThrileProPheAsnilePheSerTyrThrAsnAsnSer----

à ä 90 à G 2 à

27 GATTACTTTTTAAAATGAGGGGGCACATTACAGCTTTTAACAAATTCAAGCAATT 186

307 TCCTIATCTAATTTAATACTGGAGCAGTAAAGCTTAATAAGATTGCTAAGTTC--- 363 68 PhelysLeuGlySerSerGlyGluAspArgGlyLysValIleValThrGlnAsnGluAsn 87 g a à

364 -----TITARIGANGTITAICCAARITIAAATICTITACTIGATIGIGATAAAAAA 417 .15 TyrThrileileAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsn 134 88 IlevalTyrAsnSerMetTyrGluSerPheSerIleSerPheTrpIleArgIleAsn--- 106 118 TIAGAAAAGCACTGGTTTAATTGGCTGACTGAAATAATATATACCAATAAAAAGAAGATCA 477 8 ò a ò 8

.35 PheLeuValPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPheSerTyr 154 178 ICAACAATAGITITIGGIGATTATGAATACAAAAGCGGACTGGCTTCTTTTAAAGAAT 537 38 ATGTACATTAATCTAATTAACTTCATTGATAAGCGAGAAGAATGGGAAAAAGATAAATGG 597 a à

.55 AspileSerAsn-----AsnAlaProGlyTyrAsnLysTrpPhePheValThrVal 171 98 GAINTIAGAAATTIAGAAAATATGGAITGAGTIATAATAAA-----ACACTA 645 쉽 ò g

172 ThrasnAsnMetMetGlyAsnMetLysIleTyrIleAsnGlyLysLeuIleAspThrIle 191

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98 SerileSerPheTrplieArg------IleAsnLysTrpValSerAsnLeuProGly 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154 TGGCTTACAAATTGGATTGAGCTATTCTTGTTCAGTCCTGG-------495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15 TyrThrileIleAspSerValLysAsnAsnSerGlyTrpSerIleGlyIleIleSerAsn 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    196 TATCCAATC-----ACAGTGSCCACAAATTCTAGAGAGCAGAAGAAAATATTGGCCAAA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135 PheLeuValPheThrLeuLysGlnAsnGluAspSerGluGlnSerIle---AsnPheSer 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                84 AAATAIGAGGAAACAGIAITIITAIGGGTIGCAGIACAIICIITAAFAAGIACIIAAAAAGGT 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   244 AAAGTAGTAACCAAAGAGAAAATCCAGGAAGCCAAAGATGTCTACAAAGAACATTTCCAA 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40 AsnThileuValAspThiSerGlyTyrAsnAlaGluValSerGluGluGlyAspValGln 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04 GATGATGTCTTTAATGAAAAGGGATGGAAC---TACATTCTTGAGAAGTATGATGGGCAT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361 CIT-----CCAATAGAAATAAAAGCTGTTCCTGAGGCTTTGTCATTCCCAGA 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10 GGAAATGTECTGTTCRCG-------GTGGRAAACRCAGATCCAGAGTGTTRC 453
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25 ------AsnAsnIleAsnAspSerLysIleLeuSerLeuGlnAsnArgLys 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60 LeuksnProllePheProPheAspPheLysLeuGlySerSerGly-----GluAspArg 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78 GlyLysValileValThrGlnAsnGluAsnIleValTyrAsnSerMetTyrGluSerPhe 97
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THIE O'INVESTOR' Gene Expression Profiles in Respingeal Tissue
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Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; OTHER INFORMATION: Genbank Accession No. U02020
US-10-240-425-1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
                                                                                                                                                                                                                          FILE REFERENCE: 14912-0503
CIRRENT APLICATION NUMERS: 105/10/240.425
CIRRENT FILING DATE: 2002-09-30
PRIOR APPLICATION NUMERS: PT/USOJ/09847
PRIOR APLICATION NUMERS: 907-09-38
PRIOR FILING DATE: 2006-09-31
Sequence 1411, Application US/10240425
SENERAL INFORMATION:
                                          APPLICANT: Williams, Amanda
APPLICANT: Boland, Joseph F.
APPLICANT: Lord, Reginald V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   116.50
36.17%
20.48%
4.87%
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SEQ ID NO 1411
LENGTH: 2376
                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity:
Query Match:
DB:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1120 AAAGATTEAATACCTGIAGTTTGGATAGCTTTTAAAACAGGATTAAGAATTTCTGATGTA 1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1180 TTGACATTACAAAATAATTGCCTTGCAAAAGTTAATGGAAAG---TATTCAATAATCACA 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1294 GATATAATAGCAGTTTTAATAGCCGATTCTAAAAGTAAAAGTACAAAAGATAATAATACT 1353
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             287 SerArgGlnIleValPhe-------AsnThrargArgAsnAsnAsp 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 PheasnGludlyTyrLysileileileLysArgileArgGlyAsnThrAsnAsp----- 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319 -----ThrargValArgClyGlySlyapIle 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   390 IlePheLysSerAsnPheAsn-----GlyGluAsnIle------Ser 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             402 GlylleCysSerileGlyThrTyrArqPheArgLeuGlyGlyAspTrpTyrArgHisAsn 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   422 TyrLeuValProThrValLysGlnGly------ 430
    192 LysvallysGluLeuThrGlyIleAsnPheSerLysThrIleThrPheGluIleAsnLys 211
                                                                                                             585 AAATGCGAGAATTAGCA
                                                                                                                                                            212 ileProAspThrGlyLeuileThrSerAspSerAspAsnileAsnMetTrplieArgAsp 231
                                                                                                                                                                                                  709 TAPTTAAAAAATCGTTTGATAACTGGTGAT-----ATAGCATTTGCTACAGCAAGG
                                                                                                                                                                                                                                             PheTyrIle------PheAlaLysGluLeuAspGlyLysAspIleAsn 245
                                                                                                                                                                                                                                                                                             760 TITIATATAAGAGITUTAACTAGGITITICAAAATATATCTAAAAATAAAGAAACAAGG 819
                                                                                                                                                                                                                                                                                                                                       246 IleLeuPheAsnSerLeuGln------TyrThrAsnValValLysAsp 259
                                                                                                                                                                                                                                                                                                                                                                                  TyrTrpGlyAsn...-AspLeuArgTyrAsnLysGluTyrTyrMetValAsnIleAspTyr 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGCAGCTAATAAACATTTGCAAAGTACTAAGAATTTTGTGAGAGAAGAATTAAAAACA 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       279 LouAsnArgTyrMet-----TyrAlaAsn 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  940 ATTAGAAGGTECTTAAACGATATTATAACTCAAAACTATGCTATAGCACCGTACCAAGAT 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LeuTyrPheAsp------MetThrIleAsnAsnLysAlaTyrAsnLeu----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        356 AspileTyrAlaileGlyLeuArgGlu------GlnThrLysAspileAsn---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1237 GATATIGCINAAACITITGITAAAGGACATAGAATACCAATIGATAAT --- AAATTAGCT
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US-10-240-425-1411
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Oy 3 IleproPheAsnilePheSerTyrThrAs:	DD 214 CTACCAAGTTCTCCAGTACCAACGAGG	Qy 23 TyrPheAsnAsnIleAsnAspSerLysIle Db 274GACGAAATCAT	Gy 43 ValAspThrSerGlyTy	DD 316 TIMMANCGINCAACGATGTIAAACAAAIV	Qy 59 GinLeuksnProllePheProPheksp ::::: ::: Db 376 GARATTARTITCCATCAAACAA	Qy 78 GlyLysval	Db 430 CCGGGTGTTGACTCTAACGTTGCAACGCA	Qy 84 GlnAsnGluAsnIleValTy :: Db 490 AGTAACTIGITGITITIAIRCAGIAGACIN			Oy 121 Val DD 604 ATTGATAAACATAATGAAGAAATTAC		Db 664 TCAATCAAAGACTGGGATATCAAACTTCA	Qy 132IleSerAs Db 724 CCACAGAATGAAATTGACAAACTTTCAAA	δλ	Db 784 TCAACAGAAGACTATGTTAATAGAACAAT	Oy 165 LystrpPhePheValThrValThrAsnAs	Db 835TACATACATTCAAATGA	oy 185	Db 862	ŏ	q	Oy 224 AsnileAsnMetTrpileArgAspPheTy	Db 955 ITG	Qy 244	Db 967 ICTAATCAATTATTTAATTATTAAAACA	Qy 264	Db 1021 GCTTATATCATGACGTACGATATGCGTGA	Oy 277aspTyrLeuasnargTyrMetTy ::: ::: ::: ACTGATTTAAAGTGAATGGATTT
154 TyraspIleserasnasnalaproclyTyrasnLysTrphephevalThrval 171	610 TACAGAGGACTCTTCCCAAGACACTGCC	172 ThrAshAshMerMetOlyAshMetLyslleTyrlleAsnGlyLysleulleAspThrIle 191	192 LysValLysGluLeuThrGlyIleAsnPheSerLysThrTleThrPheGluIleAsnEys 211	691GCAGGACTIGCICTAMITAAAAATATTATGGAACGAAAGATGGT 735	212 ILBPTOASPÄHTGIVIEULLBETABSPETABPSETABABNETTEPILBARGASP 231 331 SILLEPTOASPÄHTTETTETTETTETTETTETTETTETTETTETTETTETTE	PheTyrIlePheAlaLysGluLeuAspGlyLysAspIleAsnIle	796 CATGAAAAGATGCITTTGAACAIATTGIAACACAITTTGAICAGTTTTCAICAGTAICAGTGCCTGTAICTGTG 855	247 LeuphakanSerLauGlnfyrthrAsnvalvaluyaksffyrTrpClydsnAspLaukrg 266 5 :: - - - - - - - - - - - - -	TyrasniysGluTyrTyrMetValasnileAspTyrLeuAsnArgTyrMetTyrAlaAsn		287 SerkrgölbilaValpheAsmThrArgArgAsnAsnAsnAspPheAsnGluGlyTyrlys 306 	307 Ilellellelyskrgileargdlyasmhrasmapmhrargyalargdlydlyasmie 326	949 CTAATAATCAGACCTGATTCTGGAAACCCTCTTGACACTGTTAAAGGTTTTGGAGATT 1008	327 LeuTyrPheAspWetThrILeAsnAsnLysAlaTyrAsnLeu 340 1009 TTAGGTAGATHCTTAGAGAGTTAGAGAGTTAGAGAGTTAGAGAGTTAGAGAGTTAGAGAGTTAG	9 1717	10-092-4118-405 UC-092-4118-405 UC-092-4118-405 UC-092-4118-405	APPLICANT: LAND DOUGETE-Stanm et al	TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO STAPHYLOCOCCUS. TITLE OF INVENTION: SPIDERMIDIS FOR DIAGNOSTICS AND THERAPEUTICS	CURRENT FILING DATE: 2002-03-07 CURRENT FILING DATE: 2002-03-07	PRIOR APPLICATION NUMBER: US 09/134,001 PRIOR FILING DATE: 1998-08-13	PRIOR APPLICATION NUMBER: US 60/064,964 PRIOR FILING DATE: 1997-11-08	PRIOR APPLICATION NUMBER: US 60/055,779 PRIOR FILING DATE: 1997-08-14	NUMBER OF SEQ ID NGS: 5676	EL ID NO 400 ELECTRI 3456 ELECTRI 3456	ORGANISM: Staphylococcus epidermidis 10-092-411A-405	Contact	Pred No.: 0.00153 Length: 3456	ö	
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SAGATGATANATCAAATGAATTCAGTCGACATAGCAACGAT 359 GAATTAGAAGGGTITAATTTATATCATTTAATGATTTAAC 419 GTTTCAGGTTACAAA----TT 455 AATCATTTAGCCAGTGCTAAAGGCTGTAAACAAAGTTTAGG 575 IleAsnLysTrpValSerAsnLeuProGlyTyrThrileIl 118 AATACTGTGGCTTTTCGGTCTTACCTATATATCATATT-- 624 SerGlyTrpSerile -----GlyileileSerAsnPh 135 TOTGGGCTCAGTGTTATTTTGCGCGCAGTGATAGAAGGATT 665 -----GinAsnGluAspSerGluGlnSerileAsnPheSe 153 AAGTITCAAAGTGATATGTTAACACAAATAAAG---AC 722 Ala-----proGlyTyrAsnLysTrpPhePheValThrva 171 ICCCTTGTTCCACAACGTTAAAGTGGTTAATGGATGCAGG 782 AsnMetLysileTyrileAsnGly-------Ly 186 TIRGRARARITCIGCIAGGIGGIGCIAAATIAICACCACA 842 ThrileLysValLysGluLeuThrGlyIleAsnPheSerLy 203 ACTIVITION TACCIONAL AND ACTIVIDATE AND SOL AsaLysilePro------AspThrGi 216

InAsnArgLys ---- Asn 40

ThrSerGlyTyrAsnAlaGluValSerGluGluGlyAspVa 58

ProPheAspPheLysLeuGlySerSerGlyGluAspArgGl 78 AsnGluAsnIleValTyrAsnSerMetTyrGluSerPheSe 98

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AGTGGTGGAGAATATTTAT-----1206

SWetLysAsnCluThrMetTyralaAspAsnHaSerThrGl 355

10 TyrThrasnasnSerLeuLeuLysaspileileAsnGluTyrPheAsnAsnileAsnAsp 29

ArgGlyGlyAspileLeuTyrPheAspMetThrileAsnAs 335

1137 GATGAAGGTTACGTCATAATATATGATCGG----- 1167

GANNATGTCGAAGTGAAATAAAAATCCCAACGCATATGG 1016

ACAGGGTCACTCAAAGGAACGTTTCGATACT -- 960 AspAsnileAsnMetTrpileArgAspPheTyrilePheAl 236 LysaspileAsnileLeuPheasnSerLeuGlnTyrThras 255 GlykankspleukrgTyrksnLysGluTyrTyrMetValks 275 TyrMetTyrAlaAsnSerArgGlnIleValPheAsnThrAr 295 AsnGluGlyTyrLysliellelleLysArgIleArgGlyAs 315

AAAGGTGAAATGTGATG --- AATGGTTATTATATCCCAA 1073 GATAATGAT --- GGGTATTTTCAAACTGGAGATATAGCTGA 1130

3461 RCCARCATCATCCTANTACTANAACCTANCAAAAACAGAAAAAAAAAA	SerPheSerileSerPheTrpIleArgileAesiLySTrValSerAsmicuProClyTyr 115 CGARTHONY C	116 ThrilelleAspSerVallysAanAanSerQlyTeSerlleGlyIleIleSerAsnPhe 135	136 LeuvalpheThriauLysGliAsnGluAspSerGlüGlüSerTleAsnPhöSerTyrAsp 155 293	156 Ilesser Asharakanchantakan Asharakananan Asharakananan Asharakan Asharak	164 ABRILYSTUPPHOPHEVAITHYVAITHYMARAHMELKHEULYSTIG 181	182 TyrileasnGlyfysiaulleAspThrileiysVallysGluLeuthrGly	200 AanPhaSeriysThrIleThrPheClulieAan-CyslieProAspThrClyfe 217 117 3005 ATTRANCRAAACTANAAACTGTTAAAAACTTAAAAACTTAAAAACTAAAAACTAAAAAACTAAAAAA	217 ullethiSerApSerhapAenile	231 pPhofyrilePheAlaLysGluLeuAspGlyCysAspIleAsnIleLeuPheAsnSerLe 251 2946 AANTAAALTATTTTTTAATTAAATAAATAAATTAAATTA	UGINTYTHEASTVALVALLYSASPTYTTFGLYASNASPLAU	266	279 UASRACGTYTMELTYTALAASRSEATGGLEILGVALPREASR	294	298 nAsnAspheAsnGluGLyTyTLysTlsilailelyAsuLakyGlyAsuthrAsnAs 318 c661 AMCCTATTCAAAAAACTAGAACCCTGCCCTAAAAAAAAAA	prhrargvalacgglyglyaspileleuTyrPheAspMetThrilleAsnashiysAlaTy 338	338 rAsnLeuphaketLyzasnGluthrketTyralakapksnäisSerThrGlukep-11eT 358	358 yralalledly	971 spaentletlePhedinileGinProMetAsnAsnThrTyTyTyTyTyTAsser
Db 3461 ACCAACATCA	Gy 96 SerPheSerIles	dy 116 Thrileilea 	Qy 136 LeuValPheT Db 3293CTAA	Oy 156 Ileser Db 3240 GTARACAAAA	Oy 164 ASRLys Db 3180 ANTAGAGTC	Qy 182 TyrileAsnG ::: Db 3120 TATCTC	Gy 200 AsnPheserI	Qy 217 ulleThrSer Db 3005 CACCACTCCT	Qy 231 pPheTyrIle b 2946 AATAAAATA	Qy 251 uGlnTyrThr ::: Db 2900TTTACA	Qy 266Db 2844 CCTTAAACTA	Qy 279 LASHARGTYR	Qy 294 Db 2724 ATTCACGATT	Cy 298 nAsnAspPhe 	Qy 318 pThrargVal	Qy 338 rAsnLeuPhe ::: Db 2571 -AATCAATAT	Oy 358 yrAlaileGly Db 2530 ATAAATTCAATACT	
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Db 1207CCTTACCAAATTGAAACAATCGCAAAAGACTTTGAAGGCATTGA 1250	Oy 355 uAspileTyralailedLyreuArgGluclnThr 366 Db 1251 AAATGCCTATGTGAAATATCAGTGAATATGGGGCAAGTACCAATATTA 1310	Oy 367IngalepileAbunkspAsnilellephaGin 376 Db 1311 TOTOROLANATChARATARATCHARATARARAN 1350	RESUL 8 08-10-485-131/c Sequence 131, Application US/10240485	GERRAL INFORMATION APPLIANN: CAIR*, Alexander APPLIANN: DIEPRINECX, Christian APPLIANN: PIEPRINECX, Christian APPLIANN: PIEPRINECX, Christian APPLIANN: Fute	TITILE OF INVENTION: Disgnosis of Diseases Associated with OTITILE OF INVENTION: Metabasis OF INVENTION: Metabasis OF INVENTION: MARKEN SAID 11007 — PLILE REPRENENCE: 2013, 1007 — CORRENT APPLICATION NUMBER: 195/10/240,485	D. CHENEARY FILLING DARE: 3.002-1.002-3.00 PRIOR APPLICATION NUMBER: PCT_PEOJ_03970 PRIOR FILLING DARE: 2.001.004-0.003 PRIOR FILLING APPLICATION NUMBER: DE 1.0039088-8	PRIOR FILING EAVER 1. 2000-04-04. PRIOR FILING APPLICATION WINDERS: DB 1.0019173.8 PRIOR FILING WINDERS: DB 1.0032529.7	PRIOR FILING IMPER 2000-06-10 PRIOR AFPLICATION WNDER: DE 10043826.1 PRIOR PRIOR SE 2000-09-01 NUMBER OF SIRON DAYS: 2000-09-01	Olympia up po 131 Olympia po po 131 Organia Artificial Sequence	OF THE DESCRIPTION OF THE STATE	0.0106	dec Local Similaring 22.138 Mismarches: 173 Grey March: 6.684 Indels: 26 Gaps: 26	Co. 10 1974 10 10 10 10 10 10 10 10 10 10 10 10 10	y 1.40 international Control of C			Db 3581 araccaaataaatorcaaccaatitotrocaaaaatrocaaaaatrotaasaccatto 3522 Qy 67 aepphelyoluvaluvaluvaluvaluvaluvaluvaluvaluvaluva	Db 3521 CTYCTAAAACTATTCCAAAAAAAAAAAAAAAAACCCCCCCTCACTCTTTTTAAA 3462 Cy 80

OY 107	Qy 119 AspSerValLysAsnAsnSerGlyTrpSer128	Db 2722 CT-AAACACAAAAAAAAAAAACCTTTCCTCCAAAAACTAAAACAAAAAA	Cy 128		2603 NAANAMAAAAAAATTTATTAAAAAAAAAAAAAAAAAAAA		DB 2343 INCREMENTATION MACHINARY CONTROLL AND A 151 ASIDEMAN TO A 151 ASIDEMAN AND A 151	Db 2483 CANTANANTTACANANTCANANTCANANTCANANTCANTANCATTININITANACA 2427	Oy 171 Valihranambeketdiyanwatiys1letyriteasolylysied 187 bb 2426 ACMTRACKANTFILLETTHE 1267 2426 ACMTRACKANTFILLETTHE 1267	Oy 188 iloAspThriloLysValLysGluLeuThrGlylleAsnPheSerLysThriloThrPhe 207 Db 2366 ATACARACCTAAAA	Qy 208 GluileAsnLysileProAspThrGlyLeuileThrSerAspSerAspAsnIleAsnMet 227	pb 2328 2328	Oy 228 TrpileArgAspPheryriLetheAlsiysGluLeu	dy 240	Oy 257 ValiysAspTyTTrpGlyAsnAspLeuArgTyrAanLysGluTyTTyPkBtValAsnI1s 276	223 AstricussarciviMetivibla-Asn	2213	Oy 296 gAenAenAenAepPheAenGluGlyTyvLysILelleTleTleTleTleAfAATTATAGAYARTH 316 Db 2168 AAATACAATACATCGTCACGAAACAAAAAAATTCTAAATTTATAAAAACACAC 2111	Oy 316 FASBASPILLALGYAlArgdiydiyAspileLeuTyrPheAspWetThrIleAsBAARLy 336	dy 336 salaTyrAsaleuPheWetLysAsaGluThrMetTyrAlaAspAsHisSerThrCluAs 356 p. 206 sarrasalarracaGraysKryakTyrArasaWryRATACASASTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	356	2007 CARCACANTRITARCANTARARAGARCACTARACCARTARARCARATARARANTCCAC	dy 373
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Qy 389 CONTRACTAMARCTRANACION CONTRACTACTACTACTACTACTACTACTACTACTACTACTACTA	Qy 396 snGlyGluhan 399	Db 2350 ATAACCAAAAC 2340	RESULT 9 US-10-248-79/C	GENERAL INFORMATION: APPLICATION OF INVARIANCE APPLICATION OF INVARIANCE OF APPLICATION OF A PARTICULAR APPLICATIO	; APPLICANT: PIEPENBROCK, Christian ; APPLICANT: BERLIN, Kurt	TITLE OF INVENTION LAGROGES OF DISCASSES ASSOCIATED WITH PROPERTY. CONTRACTOR OF THE RETREAMS: 5013, 1007.	CORREST FILING DATE: 2002-10-02 PRIOR APPLICATION NUMBER: PCT/EP01/03970	PRIOR FILING DATE: 2001-04-06 PRIOR APPLICATION NUMBER: DE 10019058.8	T PELOS FILMS MAYE; 1000-04-09 PELOS	T PRIOR STLING DATE: 5000-06-30 PRIOR APPLICATION NUMBER: DE 10043826.1 PRIOR PRILING DATE: 5000-99-01 EX PUNDERS OF SED 13 NOS: 202	LENGTH: 6713	TYPE: DNA Trifficial Sequence	TATALTIES: OFFICE WINDOWNITON: chemically treated genomic DNA (Homo sapiens) (\$10-240-485-79	Agment Scores: 0.0158		48-09-910-186A-10 (1-450) x US-10-240-485-79 (1-6713)	4 ProPhakanilePhaserTyr	Oy 15 LettentysAsptletleAsnGluTyrPheAsnAsnIeAsnAspSertysIleLeuSer 34		Db 3006 ACGAAAAACCCCCAAAACTATAAAAGTCTTTCATTCATTC	2949	ATTANATCATTANGABAACAAAAACGATATAATTTTGATAAATACTAAAAATAATAAAAAAAA	Qy 88 IlavaltyrkanSerbettyrCluSerbhäSerlieSerbhatrpllekrgllekag 106 b 28/2 Khickitth 1::-

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                                                                     1887 AAAAAAAACAATCTCTTTAATAATAATACTAAAAAACTTA-----AT 1843
                                                                                                                                                                                                  391 eLysSerAsn-----PheAsnGly-----GluAsnIleSerGlyIleCysSerIl 406
                                                                                                                                           406 eGlyThrTyr-----ArgPheArgLeuGlyGlyAspTrpTyrArgHisAsn---- 421
                                                                                                                                                                                                                                                                                                                                      1782 INCOCTECCTETCTECTCTTACTANTAACTCTAACCAAAACTT 1737
                                                                                                                                                                                                                                                                        422 ------TyrLeuValProThrValLysGlnGlyAsnTyr 432
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; GENERAL INFORMATION:
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37.03%
20.59%
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3472 AAAT --- AAATTACACACATAATTTCAAATTTAAAAATT 067 CATAAACCAAATAAAATATTTTCGATTACACCATTTCCAATTTACCA---ACTTTATTCA 3011 760 AATCACAAACAATATAATTAACACAAACAATTTAACCTA------AACTATTT 3713 3532 ATCCCCAAFTATACAAATAAAACGATACAAATATTAATCCTACTTCAAAATTATATA 3473 NA21 AACOCTAACCCATAAATCCAAC 3386 3361 TITRABIRITCHARINATATICTATAACRABATATATITATARIRITAAAAAAACTIAAA 3302 3940 AABATCCATAATCCAAACTATTTCAATTCCATACTCTACACACAAAAATAAATTTCGTAA 3881 3880 CAAAAACAMINICCAAAATICCAITITIAAATITIAACAAAACCAACCACCICACATCAA 3821 117 -IlelleAspSerValLySAsnAsnSerGlyTrpSerIleGlyIlelleSerAsnPheLe 136 136 uValPheThrLeutysGlnAsnGluAspSerGluGln------148 3712 AFFCITCICATATAMAATAMAAAAAAAATCAAAAAACTCATFTTATCTACCAAAATAAT 3653 ----SerileAsnPheSe 153 153 rTyraspileSerasnasnala -- ProGlyTyrasnLysTrpPhePheValThrValTh 172 1592 CCTARCATTTAAAAATCAAACGTAAATAATTATTAAAAAATACAAATTCATTATTOTAA 3533 183 eAsnGlyLysLeuIleAspThrIleLysValLysGluLeuThrGlyIleAsnPheSerLy 203 203 sThrIleThrPheGluIleAsnLysIleProAspThrGlyLeuIleThrSerAspSerAs 223 223 pasnileasnMetTrpileArgAspPheTyrilePheAlaLysGluLeuAspGlyLysAs 243 1385 TART-----MANCANTAANAACATTAA 3362 243 pileAsnileLeuPheAsnSerLeu---GlnTyrThrAsnValValLysAspTyrTrpGl 262 262 yAsnAspLeuArgTyrAsnLysGluTyrTyrMetValAsnIleAspTyrLeuAsnArgTy 282 282 rMetTyrAlaAsnSerArgGlnIleValPheAsnThrArgArgAsnAsnAsnAspPheAs 302 302 nGluGly-----TyrLysileileleLysArgile-ArgGlyAsnThrAsnA 318 318 spThrArgValArgGlyGlyAspIleLeu------327 328 ------TyrPheAspMetThrIleAsnAsnLysAlaTyrAsnLeuPheM 342 etLysAsnGluThrMetTyrAlaAspAsnHisSerThrGluAspIleTyrAlaIleGlyL 362 91 -AsnSerMetTyrdluSerPheSerlleSerPheTrpIleArgileAsnLySTrpValSe 110

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> > 4180 AATAATATCACAAAATTCTCCTAAATATCAAAACCATAAAATCCACAAAAACAAAT 4121

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45 -ThrSerGlyTyrAsnAlaGluValSerGluGlu--------GlyAspVa

58 IGInLeuAsnProlle---PheProPhe-----AspPheLysLeuGlySerSerGl 74 yGluAspArgGlyLysValIleValThrGlnAsnGluAsnIleValTyr------ 90

25 AsnAsnileAsnAspSerlysIleLeuSerLeuGlnAsnArgLysAsnThrLeuValAsp 44

4240 ATATACACCCATTICAACAATATTATTAACAATAAAACATACGTAATTACAAATTATCAA 4181

7 IlePheSerTyrThrAsnAsnSerLeuLeuLysAsp-----IleIleAsnGluTyrPhe 24

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### ACTIVITY 1984 1982 1982 1983 1983 1983 1984 1985 1	Db 931 GAATATTIGFAIGAATTIGTIGGAAAAACACGCGAGAAAAGTTATACAATAGAAAATTIT 990		be 991 ACCANCIANTED TRAFFIE ACCOUNTS ACCIDITATION OF ACCOUNTS ACCO	Db 1051 GAGAGGGGATTAGTTGTTGTAAAAAAAAAATATTAAAGTTATAGATTTAGAAAGTGTT 1110	Qy 148 GlnSerIleAsnPheSerTyrAspIleSerAsnAsnAlaProGlyTyrAsnLysTrpPhe 167 	Oy 168 PheValThrValthrAansankeUketGlyAsankeLLyslleTyrIleAsanoly 185 bb 1168 TARACANATCANGTRYTOTANGTRYTOTANGTT	186 LysLeulleAspfhrileLysValLysGluLeuThrGlyIleAsnPheSerLysThrile	Db 1219 ANYGANINGDANTANT:		Db 1333 GAAAGTAAGATTAATT	Qy 242 LyskspileAsmile	0y 256 Valvallyshaptyrtrpolyhanhap 264 bb 1430 trychocorporantormorphanograngorn 1479	0y 285	0y 269 Lys	Oy 279 LeuksnArgTyrMetTyrAlaAsnSerArgGinIleValPheAsnThrArgArgAsnAsn 298	-	299 GRIASPENDASKILLOLYTYTYSTERLELISELYSATGILEETYSTYSTYSTERNAY 11 1 1 1 1 1 1 1 1 1	09 319 DhargvalargdlyGlyaglaleterTrPhasbyAcFirtheAsnAmburysAlfTyr 338 11	Oy 339 AgileuPheKet	dy 351 AgnitsSerThiciluApjieTyrAlaileOlypaurqiidInthrLysApjie 369 bb 1807 AmitcAAAAGAGAGAGTGTGTAWYYYGGAFTGTTGAYTGACAAGGAGTF 1866	Qy 310 AnnAgaba 372 bb 1867 Anthacarak 1878	RESULW 12 1G-09-712-45G-640/C 1S Sequence 640, Application US/09721456
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	Anodoode Trodes/TrdTn [Dit] Dord-	2951 TAAACATUTAAUTAACTICCACTIAAAAAAAAAAAAACCAAACTAAAAAATUTUTAAATA	GlnIleGlnP	395	:: 2843 AATCAAACTAC 2833	SSULT 11 17-1952-10568-97 Sequence 97, APD1ication PC/TUS0205068	BE COMPORATION NN: BAZYMES HAVING ALPHA ANYLASE ACTIVITY NN: AND METHODS OF USE THEREOF)9010-108801 VIE: 2002-02-21 1 NUMBER: US 60/270,495	4 NUMBER: US 60/270,496	V WONDELK US 00/231/142 5: 2010-05-14 NOS: 321) for Windows Version 4.0	ial	0.0108 Length: 108.00 Matches: 36.85% Conservative:	.y: 21.77% Mismatches: 157 4.52% Indels: 136 1 Gaps: 27	1-450) x PCT-USO2-05068-97 (1-2931)		LeuSerLeuGlnAsn	38 ArgiyakanThilauValkapThreerolyTyrAsnAlaoluValeeroluGluGlyAsp		Slukspargiticconnentitonstinctilitotscarcolofanchant SlukspargdlyLysValileValThrGlinAsnGluksmileValTyrAsn 	SluserPheserlisserPherrplieArgileAsn	LysTrpValSerAsnLeuProGly

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1490 ACCTIGACATEGRACATAAGAITTACCTCIAATHCTAACAGATGAGAGACACATAAATT 2431
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2940 CANTCICAAAACAAAAAATTICITCIAAATTICIACAAGGTITAAAACCICIAIT 2881
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            190 ThrileLysValLysGluLeuThrGlylleAsnPheSerLysThrIleThrPhaGlulle 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        210 AsslyslleProAspThrGlyLeuIleThrSerAspSerAspAsslleAssMetTrpIle 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    230 ArgAspPheTyrilePheAlaLysGluLeuAspGlyLysAspIleAsnIleLeuPheAsn 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        250 SerLeuGlnTyrThrAsnValValLysAspTyrTrp-------GlyAsnAsp 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            265 LeuargTyrasnLysGluTyrTyrMetValasnIleaspTyrLeuasnArgTyrMetTyr 284
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87 AsnileValTyrAsnSerMetTyrGluSerPheSerIle------SerPheTrp 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              103 IleargileasniystrpvalserasnieuProSlyTyrThr ----- IleileaspSer 120
                                                                                                                                                                                                                                                                                                                                                 13 AsnSerLeuLeuLysAspIleIleAsnGluTyrPheAsnAsnIleAsnAspSer---- 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49 AsnAlaCluValSerGluGluGlyAspValGlnLeuAsnProflePheProPheAspPhe 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69 LysLauGlySerSerGlyGluAspArgGlyLysVal ----- IleValThrGlnAsnGlu 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              31 -----LysileLeuSerLeuGlnAsnArgLysAsnThrLeuValAspThrSerGlyTyr 48
3396
82
78
72
72
                                                                                                                                                                                                                                                                               US-09-910-186A-10 (1-450) x US-09-721-456-640 (1-3396)
                                                                          Conservative:
Mismatches:
Indels:
        Length:
Matches:
        0.0132
108.00
38.284
19.624
                                                                 Percent Similarity:
Bast Local Similarity:
Query Match:
DB:
        Pred. No.:
                                                 Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
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                                                                                                           Relation to Total Rena Barbara Barbara
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WESTITM TIME: Flopy disk
OURFITES: IBM Flop of disk
SOTTHWRE: Friedrin Rabase 81.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Apple, Randolph Ted
REGISTRATION NUMBER: 36,429
REPERENCE/DOCKET NUMBER: 015389-002610US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 11-4RG-1897
APPLICATION NUMBER: WO PCT/US97/17618
FILING DATE: 01-0CT-1997
APPLICATION NUMBER: WO PCT/US97/17885
FILING DATE: 01-0CT-1997
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alternative codon distributions for
yeast (all genes)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/974,549A
FILING DATE: 19-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 08/844,419
FILING DATE: 18 APR-1997
APPLICATION NUMBER: US 08/846,017
FILING DATE: 25-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/09/721,456
FILING DATE: 22-Nov-2000
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FILING DATE: 01-0CT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 08/851,843
FILING DATE: 06-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US 08/854,050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 09-MAY-1997
APPLICATION NUMBER: US 08/911,312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 14-AUG-1997
APPLICATION NUMBER: US 08/912,951
FILING DATE: 14-AUG-1997
APPLICATION NUMBER: US 08/915,503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE DESCRIPTION: SEQ ID NO: 640:
US-09-721-456-640
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TELEPKN: (415) 576-0300
INFORMATION FOR SEQ ID NO: 640:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
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                                         Cech, Thomas R.
Lingner, Joachim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY / AGENT INFORMATION:
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STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: San Francisco
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: USA
ZIP: 94111-3834
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                                                 APPLICANT: Cech,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
        GENERAL INFORMATION:
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Oy 95 Surbasserileserbherpjleansupeirphalsenanderothyrr 113 bb 2281 Activicaa	Db 2377 TTGABACTARACOANCAATCOANTO ACCOUNT 2006 Cg 150 11-bacabactartychapileserAmhankatcoCypynancystrepherberbach 169 Db 2407 GCTGCGATTAGCTRAAARTAGCARACTAAAARTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAATTAGAAAATTAGAAAATTAGAAAATTAGAAAATTAGAAAATTAGAAAATTAGAAAATTAGAAAATTAGAAAAAA	Oy 170 Threalththankankethetolykanketiysiletyrilekandylydkeliekhap 189 Db 2455 -AibuAbAAT - AibuAbAAT 000	Db 2485 GAATTAAAAAGTCAAA. Qy 210 Amaiyalearcaapthroly.callenhisernapkanlleAarakettpile 228 Db 2499 Db 2489	Oy 230 ArgaspheTyrilePhealalysCluieuhapGlytysaspitehaniteLauPheksn 249 Db 2500 AlkichanitiriterinGrantakahanithAcyGGTAAh	250	Oy 2/0 (III/17) III/17 III/17	310	0 0	Oy 364 Q1u 364 Db 2794 GAA 2796	DESIGN 1.44 - AND TO THE
304 G.YYYELVETIETIETIETIETIETIETIEVANGUIRANIAREPIHAYNIANGUV 323 216 TYDIGGARVEGTUCHAGOT — ACORGINGURCANCTRACHAGOT — 2116 324 GLYAPETIEGHUYFYRORINGURCHAGOT — ACORGINGURCANCHA — 2116 324 GLYAPETIEGHUYFYRORINGURCHAGOT — 2116 325 GLYAPETIEGHUYFYRORINGURCHAGOT — 2116 326 A MOGUTTRACHYRAPARAPHURCHAGOT — 2116 327 A MOGUTTRACHYRAPARAPHURCHAGOT — 2116 328 A MOGUTTRACHYRAPARAPHURCHAGOT — 2116 329 A MOGUTTRACHYRAPARAPHURCHAGOT — 2116 329 A MOGUTTRACHYRAPARAPHURCHAGOT — 2116 320 A MOGUTTRACHYRAPARAPHURCHAGOT — 2116 321 A MOGUTTRACHYRAPHURCHAGOT — 2116 321 A MOGUTTRACHYRAPHURCH	2061 NYGAATATCHAAACCLAAAACAAAACTAGTT 2014 364 GLOGLISTH-LYBAAPILBAAACTAGTAGTT 364 2013 TOTAGTCTTTAGTABTTAAAACTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGTAGT	TyrtyrtyrlaSerciniePhatysSerkanPhakanGlyGlukanileSer 401	Designation (1) (Application mg/100311). Proposed (1) (A	1 APPLICATION NORTH (1972) 111 APPLICATION NORTH (1972) 111 APPLICATION NORTH (1973) 111 APPLICATION NO	C PRICE APPLICATION WATERS TO 860/084,964 PRICE PLINE MATE. 1397-11,807-08 PRICE APPLICATION DATE: 1397-16 PRICE APPLICATION DATE: 1397-08 PRICE APPLICATION DATE: 1397-08 14	omator 33 to 12 Moves: 50 for 6 Moves: 51 for	Apparent Socree: 0.0189	6 Gaps: 66-10 (1-450) x US-10-092-411A-2241 (1-30 858-TYThrAsnAsnSerLeuLeuLyaAspileTleAsnG	28	14 AppthsSectOfTyTARENAGIUGAISCHOLIGIAREVEGIntendanDFOZIA 61

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APPLIANT PERSPANSAGE THE TELEBRAN APPLIANT PERSPANSAGE THE TELEBRAN APPLIANT PERSPANSAGE THE TELEBRAN APPLIANT PERSPANSAGE THE TELEBRAN APPLIANT PROPERTY PERSPANSAGE THE TELEBRAN APPLIANT PERSPANSAGE THE TELEBR
                       6345 TCAACTTITACTAITTITAAAAATCTCTA-----CTTTCCCCAAAATTAAAAI 6292
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                                                                                                                                                                               302 AsnGluGlyTyrLysIleIleIleLysArgIleArgGlyAsnThrAsnAspThrArgVal 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 359 AlaileGlyLeuArgGluGlnThrLysAspileAsnAspAsnileilePheGlnileGln 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   133 SerAsnPheLeuValPheThrLeuLysGlnAsnGluAspSerGluGlnSerIleAsnPhe 152
                                                                                                                                                                                                                                                                                                   322 ArgGlyGlyAspileLeuTyrPheAspMetThrileAsnAsnLysAlaTyrAsnLeuPhe
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Mismatches:
Indels:
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Matches:
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GENERAL INFORMATION:
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105.00
36.92#
24.13#
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Best Local Similarity:
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CLASSMENTER, $10523 **SERVENDER_EVENTAGE $19-MAILTON'S TERROR_CLASSMENT $10-000.**

MICHAEL MISSER'S ACTUAL $107.120.**

MICHAEL MISSER'S ACTUAL $107.120.**

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Affasticule referencias B CMD: D38442; NID:g1374775; PIDN:BAA07477.1; PID:g1374776
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                                                                                                                                                              73, Gaps
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Length 1297;
QS.3%; Score 604.5; DB 2; Length 1 Best Local Similarity 32.0%; Pred: No. 46-27; Indels Matches 175; Conservative 87; Mismatches 172; Indels
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Shift, T. Kvarkono, H. Popoff, N.R.; Ekimed, N.R.; Sakaguchi, G.; Kosaki, S.; Krieşii
Macike Cardis Best, B.S. 5555, 1990
Affattes wed.ecule sequence of the gene encoding Clostridium botulium neurotoxin type
Affattes enco mahar; 18155; worth-51015653; PMID:2216735
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A/Modesule type: DNM
A/Modesules :1.1276 cATN>
A/Modesulescence DMML134224; NID:940395; FIDM:CAA48175.1; FID:940396
CA.Superfamily: tetanus roofin
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A:Reference number: A60027; MUID:90344918; PMID:2116911
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Cispeciaes Clostridium butyricum 15-way-1998 *text_change 16-Jul-1999
Cispecession: JUNISE SISIAS
*Rybolier, 5: * Meuser, D.; Quazz. M.; Niemann, H.; Popoff, M.R.
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A. William of W. W. W. Freeden and Odding the Strenminus of the bouilinum type E to Ancessee number S 5014; William Strenminus of the bouilinum type E to Ancessee number S 5014; William Strenminus S 5014; William S 5014; W
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ASPERTIMENTAL SOURCE STRING (20), subtype C. SHIRTON (20); Show, C.C.). Atkinson,

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                                                                                                                                                                                                                                                                                    bontoxilysin (EC 3.4.24.69) A precursor - Clostridium botulinum
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A.Reference number: A33401; NUID:89350959; PMID:5669749
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A.Msetduer 1.12 < Pub.
A.Cross-references: EMEL: D67030; DDBJ:D50421; NID:92160224
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Biochem. Blophys. Res. Commun. 162, 1388-1395, 1989
                                                                                                                                                                                                                                                                                                                                                                                     N; Alternate names: botulinum neurotoxin type A
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A; Residues: 867-880; 1148-1217, 'Y', 1219 <GIN>
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A; Accession: A27000
A NEW STREET HOUSE, 14(8); MID: $112.659; PRD: 176.170

A NEW STREET HOUSE, 14(8); MID: $112.659; PRD: 176.170

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A,Molecule type: DNA
A;Gene: atx; both
C;Function:
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                                                              A;Description: catalyzes hydrolysis of a Gla-Phe peptide bond in synaptobrevin 2 C;Superfamily: tetanus toxin
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A;Residues: 634-994 <CAM>
A;Cross-references: EMEL:X70817; NID:9407782; PIDN:CAA50148.1; PID:9407783
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No. 9e-26;
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A;Residues: 2-29,'M',31-45 <DAS>
A;Accession: S08562
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A;Molecule type: protein
A;Residues: 2-16 <SCH1>
A;Accession: S08573
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A; Residues: 2-17 <SCH2>
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Ancross references: GBTX0448; NID:440789; PIDN:CAA28033.1; PID:440770
Machine Action No. 1, 120:440770
Machine Action No. 1, 120:440770
Artitle: The complete unicocide sequence of tetamus toxin.
Article: The complete unicocide sequence of tetamus toxin.
Are Reference unimper: AA2787; WIID:874079; PRID:3774847
Arcensision: AA2787; WIID:874079; PRID:3774847
A;Residues: 1-1315 <EIS>
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C.Date: 16-Aug-1996 *zequence_revision 16-Aug-1996 *text_change 16-Jul-1999 
C.Accession: I40813; S48108
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**A. T. Michem. 239. 61-69. 1995
**A. T. Lie Structural Sendies on the Endre adopteptidate 119th Chain of tetanus neurotox A; Reference number: 869348; NUID:95262889; PMID:7746050
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Spoolson, P. Benfendil, P.; Pouldain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta.
Rature 339, 832-835, 1992
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A;Residues: 743-1315 <FA2>
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A; Residues: 2-31 <DEF>
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169; Indels 114;

Query Match 17.8%; Score 425; DB 1; Length 1315; Best Local Smillarity 26.4%; Pred No. 8.5e-71.

859 IPPSYSKWIDCWVDNEEDIDVI-----IKKSTILMIDINNDIISDISGFNSSVITYPDA 912 QLNPIFPFDFKLGSSGE-----DRGKVIVTQNENIVYNSMYESFSISFWIRINK-WVS 110 3 IPP ---- NIPSTINNSLLKDIINEYPNNINDSKILSLQNRKNTLVDTSGYNAEVSEGDV 58

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> > Thillis: Retains toxis: primary structure, expression in E. coll. and homology with both Alestenene under AlseBey MID:87051814/ PMID:3556478 Alestenene AlseBey MID:87051814/ PMID:3556478 Alestenene AlseBey MID:87051814/ PMID:3556478

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1077 -CNNNNDYVSIDKFRIFCKALNPKEIEKLYTSYLSITFIRDFWGNPLRYDTSYTLIPVAS 1135
                              965 HIRDYGINEYSIISSMKKHSISIGSGWSVSIKGNNLIWTLKDSAGEVRGITFR-DLPDKF 1823
                                                                      1024 NAYLANKWVFITITNDRLSSANLYINGVINGSABITGLGAIREDNNITLKIDR----- 1076
913 OLVP-----GINGKAIHLVNNESSEVIVHKAMDIEYNDMFNNFTVSFWLRVPKVSAS 964
                 111 NLP-----GYTTIDSVKNN-----SGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNA 160
                                                     161 PGY--NKWFFVTVTNNDAGNMKIYINGKLIDTIKVKELTGINFSXTITFEINKIPDTGLI 218
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207 SIPFKLSSYTDDKILLSYFNKFFKRIKSSSVLNMRYKNDKYVDTSGYDSNININGDVYKY 266

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118 IDSVK-NNSGWSIGIISNPLVFTLKQNEDSEQSINFSYDISN 158

325 INCMRDNNSGWKVSLNHNEIIWTLQDBAGENQKLAFNYGNAN 366

Search completed: November 7, 2002, 14:46:49 Job time : 53 secs

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Squma K.:
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Bacteria; Pirmicutes; Clostridia; Clostridiales; Clostridiaceae;
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0.-ROV-1990 (Rel. 16, Last amoration update)
15-UNY-2002 (Rel. 41, Last amoration update)
Botulinum geurotoxin type Cl precursor (RC 3.4.24.69) (BONY/Cl)
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ETP2_MYXVL
RPB1_PLAFD
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Copyright (c) 1993 - 2002 Compugen Ltd.
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HEAVY CHAIN (H), THE LIGHT CHAIN HAS THE PHARMACOLOGICAL ACTIVITY, RHILE THE N-NAD. C-FERLINAL OF THE HEAVY CHAIN MEDIATE CHANNEL PROPARTION AND TOXIN BITNOINC, RESPECTIVELY.
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                                                                                                                                                                                                              HISCELANBOUS: THERE ARE SEVEN ANTIGENICALLY DISTINCT FORMS OF BOTULINGN NURBFOOKEN: TYPES A, B, C, D, E, F, AD G. MATGELANBOUS: SOFULIND TYPE C, NURBFOOKEN IS SYNTHESIZED BY C STRAIN OF CLOSTRIDIUM BOTULINGN WHICH CARRY THE APPROPRIATE
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BOTULINUM NEUROTOXIN C1, HEAVY-CHAIN.
ZINC (GATALYTIC) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZINC (CATALYTIC) (BY SINILARITY).
INTERCHAIN (PROBABLE).
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                                                                                                                                                                                                                                                                                                                                                                                                                                         BACTERIOPHAGE.
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pfam; PF01742; PeptidaSe_M27; 1.
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PRIMES; PR0076; D8JN02XLVESN.
PF0505; P0001963; B0010XXLVESN.
PF051FE; P500142; ZINC_PR0FEASE; 1.
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InterPro; IPR000130; Zn_MTpeptdss.
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HSSP; Pl0845; 3BTA.
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STRAIN-SA-SA, and D-1873;
MOLISHA K, SPUTO B., MADO S., Oguma K.;
Wollsha K, Sputo B. Khob S., Oguma K.;
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Bacteria: Pirmicutes: Clostridia, Clostridiales, Clostridiaceae;
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Binn T. Wanzanon H. *Popoff M.R. Bklund M.H. Gakaquchi G. *
Kozeki S. Ariegiztein K. Henschen A. Gill D.M. Memann B.:
Walcakida Sequence of the gree encoding Clostridium botulinum neurosxin type D.*
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01-NOV-1990 (Rel. 16, Last sequence update)
101-NOV-2002 (Rel. 41, Last annotation update)
Botulinum seurotoxin type D precursor (EC 3.4.24.69) (BoNT/D)
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J. Vet. Med. Sci. 54:905-913(1992).
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Ϊ 83; Mismatches 146; Indels 27; Gaps 36.3%; Score 867.5; DB 1; Length 1276; Š Pred. 146871 43.24;

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Clostridium botulinum. Bacteria: Pirmicutes: Clostridia: Clostridiales: Clostridiaceae: 01-KOV-1997 (kml. 35, Last sequence update)
2-UO-2002 (831, 41, Lest annotation update)
80tulinum meurotoxin type G precursor (RC 3.4.24.69) (BONY/G) 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequ STANDARD; (Bontoxilysin G). MCBI_TaxID-1491; Clostridium. BXG_CLOBO Q60393;

STRAIN-113 / 30; NEDLINE-94092745; PubMed-8268233; SECUENCE FROM N.A.

Gumpell, C. Olitica P.C. Bast A.K. D. Bast A.K. D. Dast A.K. Delection of the page coding for Clostifician bothlinam of the page coding for Clostifician agrantisation in the Comparison of Clostifician agrantisation in the Comparison of Clostifician agrantisation of Clostifician agrantisation of Clostifician agrantisation and Clostifician agrantisation and Clostifician agrantisation and Clostifician agrantisation and Clostifician agrantisation agr ENDOPRPTIDASE.

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BOTULINUM NEUROTOXIN G, LIGHT-CHAIN, BOTULINUM NEUROTOXIN G, HEAVY-CHAIN, ZINC (CATALYTIC), (BY SIMILARITY). BY SIMILARITY. ZINC (CATALYTIC) (BY SIMILARITY). PRINTS PRODUCES OF CONTINGENT PRODUCT PRODUCT PRODUCT PROTUCT STRC_PROTRES; 1. PROSTER, PROTOLAGE; METALOGUESSE; ZhC. INT_META. BY COLAGE; METALOGUESSE; ZhC. INT_META. InterPro: IPRG00395; Bontoxilysin. InterPro: IPRG00130; Zn_MTpeptdse. Pfam; PF01742; Peptidase_M27; 1. 2230 230 230 230 230 ACT_SITE METAL CHAIN CHAIN

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              939 INCHEDANSGWKVSLAHNELIWILGDNSGINGKLAFNYGNANGISDYINKWIFVTITNDR 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BOTULINUM NEUROTOXIN E, LIGHT-CHAIN.
BOTULINUM NEUROTOXIN E, HEAVY-CHAIN.
ELNG (CATALYTIC) (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    66;
                                                                                                                                                                                                                                              Gimenez J., Foley J., Dasquite B.R.;
Stron. Clost in type E from Clostidium botulinum and C. butyricum;
Partial sequence and Compatison.";
Partial Sequence and Compatison.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EINC (CATALYLIC) (BY SIMILARITY).
INTERCHAIN (PROBABLE).
K -> M (IN REF. 2).
type E toxin gene from Clostridium butyricum strain BL6340.";
J. Gen. Microbiol. 137:519-525(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ffam: PGT/43; Peptidase_MZ7; 1.
PETODA: PB00145; PATOTILYSIN.
PETODA: PB00145; PROTICALINSIN.
PROSITE: PS00143; ZRC.PGT/PATSIN.
PROSITE: PS00143; ZRC.PGT/PATSIN.
PROTICCKIN: Transmembrane: PRydrolase, Metalloprotease; Zlnc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 594; DB 1; Length 1250;
Pred. No. 3.7e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90; Mismatches 160; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         143265 MW: 81718582C2312857 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      zn_Mrpeptdse.
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Interpro, IPR000130; Zn_MTpeptdse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL, X62089, CAA43998.1; ...
PREL, X54100, CAA7321.1; ...
PIR: JR0256, JR0256, JR0256, PRR: S1645, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 150; Conservative
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1250 AA
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                                                                                                                                                 SEQUENCE OF 1-48.
STRAIN=5262;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INIT_MET
CHAIN
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DISULFID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FGREINATEVSSLYWIOSSTWILKDFWGNPLRYDTOYYLFNOGMONIYIKYFSKASMGET 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1129 APRTN-FNNAALWYQNLYLGLRFIIKKASNSRNINNDNIVREGDYIYLNI------ 1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1178 ------DNISDES-TRVYVLVNSKEIQTQLF--LAPINDDPTPYDVLQIKKYYEKTTY 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1227 NCOILCEKDIKTFGLFGIGKFVKDYGYVWDTFDNYF--CISOWYLRRISENINKLRIGCN 1284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        957 TIISCIKNDSGWRVSIKGNRIIWTLIDVNAKSKSIFFERSIKDNISDYINKWFSITITND 1016
                                                                                                                                                                                                                                                                                                                                                                                                                                         839 SIPPDLSLYTKDTILIQVFNNYISNISSNALLSLSYRGGRLIDSSGYGATMNVGSDVIFN 898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 PIFFFDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKWVSN-----LPGY 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   899 DIGNGOFKLNNS--ENSNITAHQSKFVVYDSMFDNFSINFWVRTPKYNNNDIQTYLQNEY 956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           116 TIIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNN 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      175 MMCHMKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINMHIRDFYI 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                235 FAKELDGKDINILFNSLQYTNVVKDYMGNDLRYNKEYYMVNIDYLNRYMYANSRGIVFNT 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     295 RRNNNDFNE------GYKIIIKRI---RGNINDTRVRGGDILYFDMIINNKAYNLF 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     342 MKNETWYADNHSTEDIYAIGLREGIKDINDNIIFOIODMNN--TXXYASOI----FKSNF 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          396 NGBNIS-----GICSIGTYRFRIGGDWYRH-NYLVPTVKOGNYASILESTS----TH 442
                                                                                                                                                                                                                                              87; Mismatches 172; Indels 73; Gaps
                                                                                                                                                                                                                                                                                                                                           2 TIPPHIPSYTHNSLLKDIINEYFNNINDSKILSLONRKNTLVDTSCYNAEVSEEGDVOLN 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MRDLINEW-SIJ7316; PURGHG-202337.

TOCKOSAWA TO W. WEARAM T., Indoh T., TSUZUKI K.,

TOCKOSAWA TO W. WEARAM T., Ogumen a encoding the S'terminus of the botulinum

Tockoling of a DNA fragment aencoding the S'terminus of the botulinum
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sequences of the Boculania meurochain Bedrived from Clostridium
boculinum type R (strain Beluga) and Clostridium buyatioum (strains
Stack 1181 and RCC 477821, 333.107-113 (1922).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Sentovilystu B).
Osetradium butyrioum.
Sestratium butyriouss; Clostridia; Clostridiales; Clostridiaceae;
                                                                                                                                                 DB 1; Length 1296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-001-1999 (Rel. 26, Created)
01-001-1999 (Rel. 26, Lats Esquence update)
15-004-1909 (Rel. 41, Last sanotation update)
Botulinum neurotoxin type E precursor (EC 3.4.24.69) (BONI/E)
          435 449 INTERCHAIN (PROBABLE).
1296 AA; 149013 MW; DC8E47E15F665C31 CRC64;
                                                                                                                                      25.3%; Score 604.5; DB 1
32.0%; Pred. No. 9.1e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRI: 1250 AA.
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STRAIN-ATCC 43181, and ATCC 43755;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=92181428; PubMed=1543481;
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                                                                                                                                                                                                                                              Matches 156, Conservative
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                                                                                                                                                 Query Match
Sest Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     443 WGEVPVSE 450
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30995;
          DISULPID
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December B.R., Foley J., Niece R.;
Braitla sequence of the light chain of botulinum neurotoxin type A.";
Prothemistry December 36:1162-4162(1987).
(5)

Supposed or 1-18 FROM N.A.

MERCHARD-SEGGES | PROME SEGGES |

MERCHARD-SEGGES | PROME SEGGES |

FOLIATE A: PLAIMAR Y. IRON K., MAROJIMS N., KANDE N., OUNB K.;

FOLIATE CHERCHELISTICS Of two forms of contour components;

FOLIATE A: PLAIMAR SEGGES |

FOR SEGGES SEGGES |

FOR SEGGES SEGGES SEGGES |

FOR SEGGES SEG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 618-045.

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Crystal, structure of botulinum neurotoxin type A and implications
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sertial annion oxid sequence of the heavy and light chains of 
boullinum neurotoxin type A.*; 
Blochem. Blophys. Res. Commun. 119:900-904(1984).
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                        Betley N.J., Somers E., Dasgupta B.R.;
"Characterization of botulinum type A neurotoxin gene: delineation of
the N-terninal encodin gregion." Testion." Sicohem. Brophys. Res. Commun. 162:1388-1395(1989).
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Stronger D.E., Returnson T. Welling J., Minton N.P.;
whe complete mains on and sequence of the Clostridium byte A neurocoxin, deduced by nucleotide sequence analysis of the encoding
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Torgenzation and phylogenetic Interrelationships of genes encoding
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"the folher closurodial neurotoxins";
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16.001.101 no meurocoxin type A pecusor (RC 3.4.24 69) (ReMYA)
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                                                                                                                                                                                                                                  908 IDKNÇIQLENLESS-----KIEVILKNALVINGMYENFSTSFWIRIPKYFNSISLNNEYT 962
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KNETMYADNHSTEDIYAIGLREGIKDINDNIIFQIQPMNNTYYYASQIFKSNFNGENISG 402
                                                                                                                                                                    348 IPPQLSKYYDNORLLSTFTEYIKNIINTSILNLRYESNHLIDLSRYASKINIGSKVNFDP 907
                                                                                                      Gaps
                                                                                                                                   3 IPPNIESYTNNSLIKDIINEYFNNINDSKILSLQNRKNTLVDISGYNABVSEBGDVQLNP 62
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                                                                                                                                                                                                                                                                                                                                                                                                              236 AKELDGKDINILPNSLQYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYMYANS-----
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                                                                 Length 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ICSIGTYRFRIGGDWYRHNYLVPTVKQGNYASLLESTS----THWGFVPVSE 450
                                                                                                  Indels
                  858342F754862579 CRC64;
                                                                 DB 1;
                                                                                                  82; Mismatches 186;
                                                                                    1.1e-27
   -> I (IN REF.
                                                                 Score 586.5;
Pred. No. 1.1
75 T ->
91 S ->
149322 MW;
                                                                                       31.68
                                                                                                  Conservative
                  891
   875 87
891 891
1295 AA,
                                                                     Query Match
Best Local Similarity
Matches 149; Conserv
                  CONFLICT
   CONFLICT
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MEDINE-2018(128; pubMed-154348);
MEDINE-2018(128; pubMed-154348);
Medite S. Messer D. Opana A. Nikemann B. Popoff M.R.;
Sequences of the botulinal neuroboxin B derived from Clostridium
Yestulium type 6 grazali melineja and Clostridium butyrioum (strains
ARCC 43181 and ARCC 43759).
                                                                                                                                                                                                                                                                                                                                             diostridium botulinum.
Basteria Basteria: Ermicutes: Clostridia; Clostridiales: Clostridiaceae;
Glostridium.
                                                                                                                                   01-JUL-1993 (Rel. 26, Created)
01-JUL-1993 (Rel. 26, Lat. Sequence update)
15-JUN-202 (Rel. 41, Last amotation update)
Botulinum neurotoxin type E precursor (EC 3.4.24.69) (BONT/E)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochem. Biophys. Res. Commun. 183:107-113(1992)
                                        STANDARD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN-Beluga;
                                                                                                                                                                                                                                                                                                                                  Bontoxilvsin E)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID-1491;
                                        BXE_CLOBO
BXE CLOBO
                                        REAL REAL RESTRICT OF THE SERVICE OF
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. J. Biochem. 204:657-667(1992).

[3] SEQUENCE OF 1-251 FROM N.A.

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999 IGDSKLYINGNLIDQKSILNIGNIHVSDNILFKIVNCSYTRYI-----GIRYFNIF 1049
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1164 DIATTNEEKTIKISSSGNRFNQVVVM -----NSVGNCTMNPKNN-NGNN-----IGLL 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     118 IDSVK-NNSGWSIGIISNFLVFFLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNYM 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          939 INCARDNNSGWKVSLAHNEIIWTPEDNRGINQXLAPNYGNANGISDYINKWIFVTITNDR 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          176 MGNMKIYINGKLIDTIKVKELFGINFSKTITFEINKIPDTGLITSDSDNINWMIRDFYIF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     236 AKELDGKDINILFNSLQYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYM--YANSRQIVFN 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 294 TRRN----NNDFNEGYKIIIKRI-RGNTNDTRVRGGDILYFDWTINNKAYNLFMKNETWYA 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      350 DNHSTEDIYALGLREQTKDINDNIIPQLQPMNNTYYYASQIFKSNFNGENISGICSIGTY 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   821 SIPFKLSSYTDDKILISYFNKFFKRIKSSSVLRMRYKNDKYVDTSGYDSNININGDVYKY 880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62 PIFFEDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRI----NKWVSNLPGYTI 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               881 PTNKNOF -- GIYNDKLSEVNISQNDYIIYDNKYKNPSISFWVRIPNYDNKIVNVNEYTI 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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                                                                                                                                                                                                                                                                                                                BOTULINUM NEUROFOXIN E, LIGHT-CHAIN.
BOTULINUM NEUROFOXIN E, HEAVY-CHAIN.
ZINC (CATALYTIC) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Clostridium botulinum.
SBacteria, Prumicutes; Clostridia; Clostridiales; Clostridiaceae;
Costridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 TRAN (CARANTITIC) (EW SUMILARITY)

THY TREMAIN (PROBABLE)

C > 6 (IN REF 2 AND 3).

T > 5 (IN REF 2).

T > 6 (IN REF 2).

T > 7 (IN REF 2).

T > 7 (IN REF 2).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pridat; pridat
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                                                                                                                                                                                                        Neurotoxin; fransmembrane; Hydrolase; Metalloprotease; Zinc. INT_MED 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            143712 KW; D9FCE26DDA041EB4 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24.4%; Score 583; DB 1;
31.9%; Pred. No. 1.7e-27;
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InterPro; IPR000130; Zn_MTpeptdae.
Pfam; PP01742; Peptidase_M27; 1.
PRATUS, PR00760; BONTOXILESIN.
PTCDOM; PD001953; BONTOXILYSIN: 1.
PROSITE; PS00142; ZINC_PROFEASE; 1.
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Watches 148; Conserv
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ACT_SITE
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                                               Blur T., Kinzacon M., Hilló M., Ervert J., Warnars K., Kiemann B.; 
"The complete sequence of bothliaum meurotoxin type A and comparison With Other Clostridist neurotoxins"; 
V. Hill Chem. 265:9183-9156(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schlavo G., Senttuci A., Dasgupta B.R., Mehta P.P., Jontes J., Senfaesti E., Wilson M.C., Morrecucco C., Serve SNRP-25 at distinct "Bootulinum neurotoxins sero-yeas A and E cleave SNRP-25 at distinct conformation uppetide bonds."
                                                                                                                                                                                                                                                                                                                                                                chmidt J.J., Sathyamoorthy V., Dasgupta B.R.;
Partial amino acid sequences of botulinum neurotoxins types B and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rch. Biochem. Biophys. 238:544-548(1985).
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MEDLINE-85197963; PubMed-3888113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTIFICATION OF SUBSTRATE.
MEDLINE-94063091; PubMed-8243676;
         MEDLINE-90264400; PubMed-2160960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-90344918: PubMed-2116911:
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WHL; X62689; CAA4458B.1; --
FIR; A60027; A60027;
FIR; B32294; B35294,
FIR; J10257; J10257
FIR; S06875; S06575.
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PIR, JH0257, JH0257,
PIR, S18111, S18111.
PIR, S21178, S21178.
HSSP, P10845, 3BTA.
MEROPS, M27,002.
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the Duropean Bioinformatical Institute. There are no restrictions on its use A non-profit institutions as long and its consent is it no modified and this statement is nor removed. Usage by and for commercial entities enquires it license agenement (See http://www.isbrsib.ch/announce, or send an email to licenses/sip.ch).
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BOTULINUM NEUROTOXIN B, HEAVY-CHAIN.
ZINC (CATALYTIC) (BY SIMILARITY).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS: PRO0760; BONTOXILYSIN.
PFEDOM: PRODIES: PONDOXILYSIN.
PROSITE: PRO0142; ZIX.PROTERSE.1.
Neurotoxin; Transmembrane; Hydrolase; Metalloprotease; Zinc.
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InterPro: IPR000130; Zn_MTpeptdse.
Pfam: PF01742; Peptidase_M27; 1.
                                                                                                                                                                                                                                                                                                                                                                    EMBL; M81186; AAA23211.1; -.
EMBL; Z11934; CAA77991.1; -.
EMBL; X70817; CAA50148.1; -.
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"Borlinham neurofoxins are alic proteins.";
"D. Biol. Obem. 267.23479-23483(1992).
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Schmidt J.J., Sathyamorthy Y., Dasqupta B.R.;
Fartial amino acid sequences of Doctilium meurotoxins types B and
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                                                                                                                      MEDLINE-92384550; PubMed-1514783; Whelan S.M., Elmore M.J., Bodsworth N.J., Brehn J.K., Atkinson T.,
                                                                                                                                                                                                                                             Minton N.P.; 
Midensular closing of the Clostridium botulinum structural gene 
encoding the type B neurocoxin and determination of its entire
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Botulluum neurotoxin type B (strain 657); partial sequence and
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Submitted (APR-1992) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 1-16 AND 441-458.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 35-245 FROM N.A.
STRAIN-NOTC 7273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochimie 70:811-817(1988).
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                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleotide sequence.";
                                                                  SEQUENCE PROM N.A.
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STRAIN-657 SECUENCE

21;

Gaps

1227 -DEBSTDEIGLIGIHRFYESGIVFEEYKDYFCISKWY----LKEVKRKPYNLKL---GC 1277

This SWISS-PROT entry is copyright. It is produced through a collaboration between the SWiss Institute of Bloinformatics and the EMBL outstation -

- 1 - SIMILARITY: BELONGS TO PEPTIDASE FAMILY M27.

395 FNGENISGICSIGTYRFRLGG-------DWYRHNYLVPTVXQGNYASLLESTST 441

us-09-910-186a-10.rsp

6

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442 HWGPVPVSE 450
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1295 AA
                15-JUN-2002 (Rel. 41, Created)
            STANDARD
1278 NWQPIPRDE 1286
              045894; p77780:
            BXA2 CLOBO
          SRO
       RESULT 8
              25556883C66564456547597618656989896522064688888888888888888888
e
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15-178-2010; [86], [1], Limir siquence update; [15-178-2010] [86], [11], Limir siquence update; [15-178-2010] [86], [11], Limir simurtation update; [15-178-201] [86], [87], [

NCBI_TaxID-1491; lostridium.

13;

67; Gaps ISGYNAEVSEEGDVOLNP 62

IN A, LIGHT-CHAIN.
IN A, HEAVY-CHAIN.
BY SIMILARITY).

InterPro; IPR000130; 2n_MTpeptdse. Pfam; PF01742; Peptidase_M27; 1.

88

SRYGAKINIGDRVYYDS 907 INKWVSNL --- PGYTIID 119 IPKTFSKINLNNEYTIIN 965 3Y-NKWFFVTVTNINGIGN 178

STRAIN-Kyoto-F; MEDLINE-94143603; PubMed-8310180; SECUENCE FROM N.A.

Willems A., East A.K., Lawson P.A., Collins M.D., Sequence of the gene coding for the neurotoxin of Clostridium botulinum type A associated with infent botulism: comparison with Deer clostridial neurotoxins; ; Res. Mirrobiol. 144.547-556(1993).

SECUENCE OF 1-65 FROM N.A. STRAIN-Kyoto-P

GEDLINE-97016817; PubMed-8863443;

his sprace force are in copycient. It is produced through a collabor between the SAMS institute of Bioinformatics and the BMS custact, the Empress Bioinformatics Institute. These are no restrictions on benefits and this streament is not removed. Biospe powered of name of the regime of the streament is not removed. Biospe powered of name certifies and this streament is not removed. Biospe powered of name or sends an email to litomateist-sit.oil. (See http://www.imb-sit.oi/homoo sends an email to litomateist-sit.oil).

clostridiaceae:

EMBL; X73423; CAA51824.1; -. (SSP:

MEROPS; M27.002; -. Interpro; IPR000395; Bontoxilysin.

		551	Probon, Pro1942, Peptidase_Nai, 1.	001963;	Sontoxilys	in; 1.	S. C.	
		X X	Neurotoxin	Transm	Transmembrane, H	ydrolase;)	Hydrolase, Metalloprotease,	ase; Zinc.
		E	CHAIN			BOTULINUM	NEUROTOXIN	A, LIGHT-CHAI
		E 6	CHAIN		1295	BOTULINUM	BOTULINUM NEUROTOXIN	A, HEAVY-CHAI
		# E4	ACT_SITE		223	BY SIMILARITY	KITY.	
	_	EE	METAL		226	ZINC (CATA	ALYTIC) (BY A ABY STATES	SIMILARITY).
		E	DISCLETO		1279	BY SIMILAR	AITY.	BY SIMILARITY.
		: 1:8	TRANSMEM	655 1295 AA	675	POTENTIAL NW: 5DA042	NTIAL. SDA04A13D98D6372	CRC64:
	_	1	Match			- 5	. DB 1:	
		an Z	Best Local Si Matches 147;	1 Similarity 30.1	e e	Pred. No. 8.6e 81; Mismatches	183	67
		ð	3 IPFNI	FSTTNNSL	LKDIINEYFN	NINDSKILSL	DNRKNTLVDTSG	IPFNIFSTTNNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEBGDVOL
		8	848 IPPOI	SKYVDMKK	LSTPTETIK	NIVNTSILSI	YKKDDLIDLSR	IPPOLSKYDDNKKLLSTPIDTIKNIVNTSILSIVYKKDDLIDLSRYGAKINIGDRVYY
		ő	63 IFPPD	PKLGSSGE	NGTAINTON	ENIVYNSMYE	IFPPDFKLGSSGEDRGKVIVTQNENIVYNSMYESPSISFWIRINKWYSKL-	WYSNLPGYTI
		g	908 IDKNO	IKLINLES	STIEVILK	NAIVYNSMYER	FSTSFWIKIPK	IDKNOIKLINLESSTIEVILKNAIVYNSMTENFSTSFWIKIPKTFSKINLNNEYT
	4	δŏ		SGWSIGII.	SNFLVFTLKO	NEDSBOSINE	SYDISHNAPGY-	SVKNNSGMSIGIISNPIVPTLKONBDSDQSINFSYDISNNAPGT-NKMPPVTVTNNAM
		음	966 CIENN	SCWKVSLM	RGEIIMLEGE	NKONIORVVE	(YSQMVNISDYI	NRWIFVTITNNRL
		ě f	179 MKIYI	NGKLIDTI :	XVKELTGINE	MKIYINGKLIDIKWKELIGINESKIITEBINKIPDI	rpD7GLITSDSD	MKIYINGKLIDTIKVKBLTGINFSKTITFBINKIPDTGLITSDSDNINMAIRDFYTFA
		ò		INILPNSE	PYTHVVKDYW	GNDLRYNKBY	LDGKDINILPNSLQYTWVKDYWGNDLRYNKEY IWWILDYLNRYMYANS	YANS
		a	1078 LNEKE	IKDLYDSQ	SNSGILKDFW	GNYLQYDKPY	(H: : : : : : : : : : :	: : :: :: :: :
		ò	288RQI	VFNTRRNN	NDFNEGYKII	IKRIRGNIND	PRVRGGDILYPD	ROIVENTRRNNDENBOYKIIIKRIRGNTNDTRVRGGDILFFDMTINNKAYNLPMR
		g	1138 PRCSV	VTTNIYLN	STLYEGTKFI	IKKYASGNEDI	NIVERNDRVYIN	PRGSVVTTNIYLNSTLYEGTKFIIKKYASGNEDNIVRNNDRVTINVVVKHKETRL
		ð	346 TMYAL	NHSTEDIY	AIGLREQTED	THYADNHSTEDIYAIGLREQTKDINDNIIFQI		-OPMNNTYYASQIFKSNF
ř		g	1193AT	NASQAGVE	KILSALEIPE	VGNLSQVV	ATNASQAGVEKILSALEIPDVGNLSQVVVNKSKDDQGIRNK-	IKCKINI
		ò	398 ENISC	ICSIGTER	FRLGG	DWYRHNYLVP	PVKQGNYASLLE	ENISGICSIGTERRIGGDWYRHNYLVPTVKQGNYASILESTSTHMGFVPVSE
		음	1241 NNGNE	IGFIGPHL	NNGNDIGFIGPHLYDNIAKLVASNWYN-		ROVGKASR	ROVGKASRIFGCSWEFIPVDE
		RES	RESULT 9 BXF_CLOBO ID BXF_CLOBO	STA	STANDARD;	PRT; 127	74 85.	
	-	S E	P30996;	1.00	of Created)	÷		
		ä	01-JUL-1993	3 (Rel.		edneuce nbo	Sate)	
tion -		586	15-JUN-2002 (Rel. 41, Botulinum neurotoxin (Bontoxilvsin F).	2 (Rel. neurotox sin F).		Last annotation update) type F precursor (EC 3.4	č.	.69) (BONT/F)
. 0.9		S S S	Glostridium botulinum	m botuli		000000000000000000000000000000000000000		or or the same
		888	9 5	ridium. TaxID=1491;				
		7 2 2 V	SEQUENCE PROM N.A. STRAIN-ATCC 23387;	ROM N.A.				
		X Z	MEDLINE-93 East A.K.,	012902; Richard	PubMed=139 son P.T.,	8040; Allaway D.	D., Collins M.D	p.,

DYINRWIFVTITNNRLTK 1025

DSDNINWIRDFYIFAKE 238 -- PRRYIMIKYFNLFDKE 1077 RYMYANS ---- 287 YPDMTINNKAYNLFMKNE 345 MNNTYYASQIFKSNFWG 397 FRNK-----CKMNLQD 1240

KYVDVNNIGIRGYMYLKG 1137 TINVVKNKETRL---- 1192

LLESTSTHWGFVPVSE 450 -- RIFGCSWEFIPVDD 1288 445

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SECUENCE
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"Conserved structure of genes encoding components of botulinum neutropoxin complex M and the sequence of the gene coding for the neutropoxin complex M and the sequence of the gene coding for the control of compensate in nonpreceivite Conservations botulinum type F. "Cur. Morrobiol. 79:59-77(1991).
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 64-10072 PROMEN NA.

CAMPAINT K. Date A.M. COllam M.D.

COmpeDia (K. Date A.M. COllam M.D.

COmpeDia (Continuation of the bottlanal neurotoxin gene and specific identification of the bottlanal neurotoxin gene and specific identification of neurotoxin types B. E. and E.*;

Clan. Microbiol. 31,2255-2262(1993), v.
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BOTULINUM NEUROTOXIN F, HEAVY-CHAIN.
ZINC (CATALYTIC) (BY SIMILARITY).
Roberts I.A., Thompson D.E., Sequence of the gene encoding type F neurotoxin of Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (CATALYTIC) (BY SIMILARITY).
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ZINC (CATALYT
                                                                                      PEMS Microbiol. Lett. 75:225-230(1992).
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InterPro: IPR0001305; So.Mympetdae.
Pfam. P01742; Poptidaes.M27; 1.
PRINTS: PR00756; BONTOXILYSIN.
PP0001; P0001963; BONTOXILYSIN.
PROSTIC: P800142; ZINC_PR07EASE; 1.
                                                                                                                                                                                                      KEDLINE-94297488; PubMed-7764998;
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BRBL, S7365, AAC60475.1; --
BRBL, X70820; CAA50151.1; --
EMBL, X70816; CAA50147.1; --
EMSP, PLOG455 SBTA.
MEROPS; M27.002.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DENTIFICATION OF SUBSTRATE.
                                                                                                                                        SEQUENCE OF 1-64 FROM N.A.
STRAIN-HODDS FF10;
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1018 NRLGNSRITINGNLIVEKSISNLGDIHVSDNILFK-----IVGCDDETYVGIRFFK 1068
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                                                                                                                                                                                                                                                                                                                                                        62 PIFFFOFFLGSSGEDRGKVIVTQNenivYNSMYESFSISFWIRINKW---VSNLPGYTII 118
                                                                                                                                                                                                                                                                                                                                                                                                 900 SINRNOF-GIYNSRLSEVNIAQNNDIIYNSRYQNFSISEWVRIPKHYKPWNHNREYIII 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119 DSV-KNNSGWSIG---IISNFLVFTLKQNEDSEDSINFSYDISNNAPGY-NKWFFVTVN 173
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                                                                                                                                                              Gaps
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                                                                                                                                                                                                                            2 TIPFNIFSYTNNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEEGDVQLN 61
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Relreacher N.F., Lyness V.A., Pt.Cerd D.J., Allen G., Thomson R.O.;
"Cloning, molecytide, sequencing, and expression of fetamus toxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                174 MAKGNAKIYINGKLIDTIKVKELTGINPSKTITFEINKIPDTGLITSDSDNINMHIRDFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
                                                                                                DB 1; Length 1274;
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                                                                                                                                                              Indels
45 INTERCHAIN (PROBABLE).
146709 MW; 5B99756A743BB921 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1232 ---IGLLGFHSNNLVASSWYYNNIRRNTSSNGCFWSSI-SKENGW 1272
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13-MG-1987 (Rel. 05, Last sequence update)
13-MG-1989 (Rel. 38, Last amountion update)
Technis Oxin precursor (RC 3.4.24.68) (Tentoxylysin).
Clostridium techni.
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                                                                                                                                                              83; Mismatches 180;
                                                                                                                           1.7e-25;
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                                                                                                23.0%; Score 549.5;
31.6%; Pred. No. 1.7
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Fairweather N.F., Lyness V.A.;
The complete nucleotide sequence of to
Nucleic Acids Res. 14.7809-7812(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Weller U., Hudel M., Habermann E.,
Areanus toxin: Primary structure,
homology with botulinum toxins.",
EMBO J. 5:2495-2502(1986).
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                                                                                                                                                                     Conservative
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      429 44
1274 AA;
                                                                                                                           Best Local Similarity
Matches 147; Conserv
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STRAIN-CN3911,
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TEIX_CLOTE
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21:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1076 -CNNNNOYVSIDKFRIFCKALNPKEIEKLYTSYLSITFLRDFWGNPLRYDTEYYLIPVAS 1134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1135 SSKDVQLKNITDYMYLTNAPSYTHGKLNIYYRRLYN-----GLKFIIKRYTPNNEIDSFV 1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1190 KSGDFIKLYVSYNNNEHIVGYPKDGNAPNNLDRILRVGYNAPGIPLYKKMEAVK---- 1243
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Přem. pr01/42, Peptidase_M27, 1.
pm.MS; PR0076, BeNTOZILYSIN. 1.
PRODM. SOSTER. BONTOZILYSIN. 1.
PRODM. SOSTER. PRODVAZ, TAKL_PENTASSE, 1.
PRUTOZNÍ, TRINSHENDYBANE, 124CPASSE, 1.
PRUTOZNÍ, TRINSHENDYBANE, 124CPASSE, 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161 PGY -- NKWPFYTVINNAMGNHKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLI 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219 TSDSDNINWFIRDFYIFAKELDGKDINILFNSLQYTUVVKDYWGNDLRYNKEYYMVNI-- 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          277 ------DYL---NRYMYANSROIVFWIRRNNDFNEGYKIIIKRIRGMIN-DIRV 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322 RGGDILYFDWTINNKAY-----NLFMKNETMYADNHSTEDIYAIGLREQTKDINDNI 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   374 IFQIOPMNHTYYASQIFKSNFNGENISGICSIGTYRFRLGGD------WYRHNYL 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59 OLNPIFPFDFKLGSSGE-----DRGKVIVTQNENIVPNSMYESFSISFWIRINK-WVS 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 912 OLVP-----GINGKAIHLVNNESSEVIVHKAMDIEYNDMFNNFFVSFWLRVFKVSAS 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111 NLP----GYTIIDSVKNN----SGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNA 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 114; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             858 IPPSYSKNLDCWVDNEEDIDVI-----LKKSTILNLDINNDIISDISGFNSSVITYPDA 911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 IPF----NIFSYTNNSLLKDIINEYFNNINDSKILSLONRKNTLVDTSGYNAEVSEEGDV 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium botulinum.
Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATALYTIC) (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                               SINC (CATALYTIC) (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    150550 MW: 134C3657133EP81D CRC64:
                                                                                                                                                                                                                                                                                                             TETANUS TOXIN LIGHT CHAIN
TETANUS TOXIN HEAVY CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ) Score 425; DB 1; L

) Pred. No. 4.5e-18;

90; Mismatches 169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
Botulinum neurotoxin type E. nontoxic component
                                                                                                                                                                                                                                                                                                                                                                                                                                    BY SIMILARITY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        424 VPTVKGGNYASLLESTSTHWGFVPVSE 450
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01-NOV-1995 (Rel. 32, Last sequ
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-1- MASCELLANDON: THE C-TERMINGL OF THE HEAVY CHAIN BINDS TO GANGLIOSIDE RECEPTORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NR. STEUCE, BIOL (1788-19199).
1- EUFCHOLK, TERNING TOXIN ACTS BY INHIBITING NEDROFANSHITTER
RELEASE. IT BINGS TO PERIFERENAL NEDROCHAL STRAFESS, IS INFERNALIZED
WAS DOTTED THE STROKOLDER OF THE ZAMA INFO THE STRAING
PHERE IT CAN AVVE BETHERE POSTSTARPIT (AND PRESTMATIC NEDROSHS. CTR
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DEPENDENT STREAM CATALYZES THE HUDGUIYSIS OF THE 76-CLIA-|-PHE-77
BOND OF STREPORENTY: HTDROLYSIS OF 76-CLIA-|-PHE-77 BOND IN
                                                                                                                      hèdrian, szoubence, akun Diskupting Bombs.
Ratieglatesin K. Hemoschen A., Waller U., Habermann E.; Inydryl groups
Afrizngement of diskulfide bridges and positions of sulfhydryl groups
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Unland 7.C., Wingert L.M., Swaminathan S., Furey W.F., Schmidt J.J.,
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SELLANO C. BERGERIT P. FOLISH B. Resetto O., de Laureto P.P.,
SELLANO C. BERGERIT P. FOLISH B. Resetto O., de Laureto P.P.,
Margura e.R. Vollinare D. Relicocytis B. Resetto O., de Laureto P.P.,
P. POROSPIT C. Glavare D. Bercocytis B. Lock B.
P. POROSPIT C. Glavare O. STANDARD B. P. Relicocytis P. Lebase
P. POROSPIT C. Glavare O. STANDARD B. P. Relicocytis P. P. Relicocytis D. Relico
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tetanus toxin is a zinc protein and its inhibition of 
merocransmitter release and protease artivity depend on zinc.";
BMBO J. 11:3577-3583(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M. Lieglastein K. G., Blanschen A. H., Weller U., Habermann E.,
Likeled proteolysis of teranus toxin. Relation to activity and
Johntfitchellon of Cleavage sites; vi. a. M. Control of State State State A. T. Bacchen. 202: 41-5(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTIFICATION AS ZINC-PROTEASE.
MEDLING-930110948; PUDMed-1395558;
SORTANO G., POULBIN B., Rossetto O., Benfenati F., Tauc L.,
Montecucco C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Structure of the receptor binding fragment HC of tetanus nerroboxin.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M27.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro, IPR000395; Bontoxilysin.
InterPro, IPR000130; Zn MTpeptdge.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GDLINE-92037649; PubMed-1935979;
fragment C in Bacherichia coli.";
J. Bacteriol. 165:21-27(1986).
                                                                                                                                                                                                                                                                                                    in tetanus toxin.";
Bur. J. Biochem. 188:39-45(1990).
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                                                                                                                                                                                                                                                                                                                                                                                                                                    PARTIAL SECUENCE.
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This size from early appright. It is produced though a collaboration becomes the Susa interior of local contention and the Susa interior of the susable statement is not removed. The susable statement is not removed.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              335 NKAYNLPMKNETWYADNHSTEDIYALGLREGIKDINDNIIFOIQPM--NHTYYYASQIFK 392
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  828 PKDIGLVYGINNNAIHLFGANQNIKFTNDYFENGLTNNFSIYFWLR-----NLNQNTIK 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ---IDSVKNNSGWSIGIISNPLVPTLKQNEDSEQSINPSYDISNNAPGYNKWFFVTVT-N 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 NIPSYTHNSLLKDIINEYPNNINDSKILSLQNRKNTLV-DTSGYNAEVSERGDVQLNPIP 64
                                                                                                                                                                                                                                                                                                                          Pull N. Kinoza K. Wokoasae N. Oguma K. Yashiki I.,
Pull N. Kinoza K. Yokoasae N. Oguma K. Yashiki I.,
Pull N. Kinoza Y. Tokoasae N. Oguma K. Yashiki K. Oguma T. Tokoasae N. Oguma K. Tokoasae N. Oguma H. Tokoasae N. Oguma H. Yashika M. Oguma H. Yashika M. Oguma K. Yashika M. Oguma K. Yashiki M. Oguma K. Yashi M. Oguma K. Yashi M. Oguma K. Oguma K. Yashi M. Oguma K. Oguma K. Yashi M. Manaka K. Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Microbiol. Immunol. 37:398-398(1993).
-1- FUNCTION: THE NONTOXIC COMPONENT IS NECESSARY TO MAINTAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; Length 1162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9.6%; Score 230.5; DB 1; Length
22.9%; Pred. No. 1.5e-06;
1ve 76; Mismatches 152; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1162 AA: 136829 NW: C86E9BE932DA78E4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1196 AA
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PRINTS; PR00760; BONTOXILYSIN.
ProDom; PD001963; Bontoxilysin: 1.
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InterPro; IPR000395; Bontoxilysin.
                                                                                                                                                                                                                                                                            KEDLINE=93360835; PubMed=8355622;
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Matches 97; Conserv
                       Clostridium.
NCBI_TaxID=1492;
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ID BXCN_CLOBO
AC P46081;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            An appropriate the property is produced to the body a collaboration between the Systa Institute of indictoration and the BDML outstation. The European Elocification Institute there are no restrictions on its uner by non-pority institutions as long as its octent is in on why market equits a large management of the property is not only as its octent is in one way market equits a large are areas are market (see http://www.libelichoncoming.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/end.com/en
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 783 NLFNLYTELLIKEGISPY----ELSLYAFQEQDNNVIGDISGKNTLVE-----Y 827
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SKLIGSKEDNCGWEIYFENDGLVFNIIDSNGNEKNIYLS-NISNKS-----WHYIVISIN 935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             174 NORGNAKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINGWIRDFY 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      936 REKDOLLIFIDNILVANEDIKEILNIYSS------DIISLLSDNNNYIEGLS 982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             290 IVENTRRNNUPRUECYKIIKRIRGNINDIR-----VRGGDILYFDMINNKA 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93; Gaps
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                                                                                                                                                                   Fujil N. Kimura K., Yokosava N. Yashiki T., Tsuzaki K., Oguma K., 
The complete nucleotide sequence of the gene encoding the nontoxic component of Loseridium botulium type E progenitor foxin.
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01-TES-1995 (Red. 1), Last sequence update)
01-MPV-1995 (Red. 1), Last senderation updat
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                                                                                                                                                                                                                                                                                                                                      J. Gen. Microbiol. 139:79-86(1993).
-1- FUNCTION: THE NONFOXIC COMPONENT IS NECESSARY TO MAINTAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9.6%; Score 230.5; DB 1; Length .
2.8%; Pred. No. 1.5e-06;
.ve 74; Mismatches 158; Indels
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InterPro; IPR000395; Bontoxilysin.
Pfan, PF0174.2; Peptidase_M27; 1.
PRINTS; PR00760; BONTOXILYSIN.
PIODOM; PD001963; BontoXILYSIN; 1.
                                                          STRAIN-Mashike,
NEDLINE-93195515; PubMed-8450310;
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SEQUENCE 396 AA; 46881 MW; 62A68A24740BCBE0 CRC64;
                                                                                                                                                                                                                                                                                                             21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
                                                                                                                                                      396 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saccharonyces cerevisiae (Baker's yeast).
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ditchondrial ribosomal protein VARI.
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STRAINCH FORM C. G. Exceloim / C. ST.,
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THE STRAIN K., THE ST., THE N., TO COMMAN N., Opens K., The
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                                                                                                                                                                                                                                                                                                                              Clostridium botulinum.
Bacteria: Firmicutes; Clostridia: Clostridiales; Clostridiaceae;
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-!- FUNCTION: THE NONTOXIC COMPONENT IS NECESSARY TO MAINTAIN
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18:8%; Pred: No. 0.00011;
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01-NOV-1995 (Rel. 32, Created)
01.NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
01-NOV-1995 (Rel. 32, Last annotation update)
Betulinum neurotoxin type Cl. nontoxic component.
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Pfam: PF01742; Peptidase_M27; 1.
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tive 56; Mismatches 134; Indels 172; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          122 KNNSGWSIGIISNFLVFTLKQNEDSEOSINFSYDISNNAPGYNKWFFVTVTNRMGNMKI 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         527 KRGSNGYIGDIKATVNSPLSON -----YRVR------VRYATHVSGOFNV 565
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Patent number USZ86466, 15-F2B-1994
- FUNCTION: PROMOTES COLLDIDOSMOTIC LYSIS BY BINDING TO THE MIDGUT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IIPFNIPSYTNNSLLKDIINEYFNNINDSKILSLONRKNTLVDTSGYNAEVSEGDVOLN 61
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BUNELOPARRAL GRAZE: THE CRYSTAL PROTEIN IS PRODUCED DURING
SPORULATION AND IS ACCUMULATED BOTH AS AN INCLUSION AND AS PART
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                                                                                                                                                                                                                                                                                                                                                                                 6-007-2001 (Rez. 40, Created)
6-007-2001 (Rez. 40, Created)
16-007-2001 (Rez. 40, Lear sequence update)
16-007-2001 (Rez. 40, Lear amoueton update)
16-007-2007 (Rez. 40, Lear amoueton update)
16-007-2001 (Rez. 40, Lear amoueton update)
16-007
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein).
SRYJB OR CRYVIA(B).
Bacillus thuringtensis (subsp. Kumamoroensis).
Bacitius, Firmicutes, Bacillales; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO THE DELTA ENDOTOXIN FAMILY.
                                                                                                                                                                                                                                                                                            PRT; 1138 AA.
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Pfam; PP00555; endotoxin; 1.
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Seet Local Similarity 23.1%.
Matches 109. Conservative 5.

2 INFWIRESYNMELKDIMERY INF
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                                                                                                                                                                                                                                                                                            STANDARD;
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                                          382 -NKNGK 386
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Q45708;
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	ALTONOMY: PRELIMIANN: PRELIMI	October Machine (1994) (Sept. 258) (2007) (Sept. 258)
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959 KNNSGWSIGIISNFLVFTLKQNENSEQDINFSYDISKNANGWFFVTITTNWGGRØMI 1018
                                                                                                                                                                                                                                                        1079 KDINILPNSLQYTNVVKDYWGNDLRYDKEYYMINVNYMNRYMSKKGNGIVPNTRKNNNDF 1138
                                                                                                                                                                                                                                                                                                                                                                      139 NEGYKIIIKRIRGNINDTRVRGENVLYPNTTIDNKOYSL----GMYRDSRNLGTDLVPL 1193
                                                                                                                                           019 YINGKLIDTIKVKELIGINFSKTITFQMNKIPNIGLITSDSDNINMMIRDFYIFAKELDD 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1194 GALDQPMDEIRKYGSFIIQPCNTFDYYASQLFLSSNATTNRLGILSIGSYSFKLGDDYWF 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wessio structures of neurotoxins produced from Clostridium botulinum 
types cand Droganisms. 1. programs 1307:123-126(1996). 
Bloohim. Blophys. Acta 1307:123-126(1996). 
Blooking 108443 1878.
                                                                                           182 YINGKLIDTIKVKELTGINPSKTITFBINKIPDTGLITSDSDNINMFRDFYIFAKELDG 241
                                                                                                                                                                                                  242 KDINILPNSIQYTNVVKDYMGNDLRYNKEYYMVNIDYLNRYMYANSRQIVFNTRRNNNDF 301
                                                                                                                                                                                                                                                                                                                     302 NEGYKIIIKRIRGNTNDTRVRGGDILYFDMFINNKAYNLFMKNETMYADNHST-EDIYAI 360
                                                                                                                                                                                                                                                                                                                                                                                                                                  361 GLREGIKD-INDNIIFQIQPMNNTYYASQIFKSNFNGENISGICSIGTYRFRLGGD-WY 418
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Moritshi K., Koura M., Abe N., Fujii N., Fujinaga Y., Inoue K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clostridium botulinum.
Sacteria, Firmncutes; Bacilius/Clostridium group; Clostridia;
Clostridiales; Clostridiaces; Clostridium.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1285 AA; 147365 MW; EEDE98E4ECA6C413 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996 (TrEMBLIE). 01, Created)
NOV-1996 (TREMBLIE). 01, Last Sequence update)
01-USY-2001 (TREMBLIE). 17, Last annotation update)
Neurotoxin CONSISTING of botulinum neurotoxin D and Cl
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77.7%; Pred. No. 1.5e-87;
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LitterFor. 181900395. Borcoxilysin.
LitterFor. 181900395. Borcoxilysin.
LitterFor. 181900395. Borcoxilysin.
REMORE PROINTS PRECISED TO FROM THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF T
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                                                                                                                   963 KNNSGWSIGIISNPLVFFLKQNEDSBQSINFSYDISNNAPGYNKWFFVTVINNAPGHKKI 1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1203 LRECTKDINDNIIFQIQPMNNTYTYASQIFKSNFNGENISGICSIGTYRFRLGGDWYRHN 1262
903 PIPPPDFKLGSSGEDRGKVIVTQNENIVYNSWYESFSISFWIRINKWVSNLPGYTIIDSV 962
                                                                                     122 KNNSGWSIGIISNFLVPFLKQNEDSBQSINFSYDISHNAPGYNKWFFVTVTNNRMGRAKI 181
                                                                                                                                                                                                  182 YINGKLIDTIKWKELIGINFSKTITFEINKIPDIGLITSDSDNINMWIRDFYIFAKELDG 241
                                                                                                                                                                                                                                                                                                                                                                                                                            NEGYKIIIKRIRGNTNDTRVRGGDILYFDNTINNKAYNLFMKNETMYADNHSTEDIYAIG 361
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                                                                                                                                                                                                                                                                                                               242 KDINILPNSLQYTNVVKDYWGNDLRYNKEYYNVNIDYLNRYMYANSRQIVPNTRRNNNDF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria: Firmioutes: Bacillus/Clostridium group; Clostridia;
Liostridiales; Clostridiaceae; Clostridium.
WCBI_WAXID=1491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   77.9%; Score 1824; DB 2; Length 1285; 77.9%; Pred: No. 1.3e-87;
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Last annotation update)
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01-0CT-2000 (TrEMBLrel. 15,
01-DEC-2001 (TEMBLrel. 19,
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43.9%; Pred. No. 2.1e-38;
Live 78; Mismatches 148; Indels 27; Gaps
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                                                             240 DGKDINILFNSLQYINVVKDYWGNDLRYNKEYYMVNIDYLNRYMFANSRQIVFNIRRNNN
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Clostridiales; Clostridiacese; Clostridium
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PRAME, PRO1601 BONDOILES.
PROSON BONDOISE; BONDOILES.
PROSINE, BONDOISE; BONDOILES.
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SUCCESSION FOR PROME BONDOILES.
SUCCESSION FOR PROME BONDOILES.
PROFILE JABO AM. 4788.5 WM; 7489.13928880999 CRC64;
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01-NOV-1996 (TERBLFel. 01,
01-DEC-2001 (TERBLFel. 19,
Neurotoxin.
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Astches 198; Conservative
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                                                                                                                           1019 YINGKLIDTIKVKELTGINFSKTITFQMNKIPNTGLITSDSDNIN9MIRDFYIFAKELDD 1078
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182 YINGKLIDTIKVKELTGINFSKTITFEINKIPDTGLITSDSDNINMWIRDFYIFAKELDG 241
                                                                                                                                                                                                                              242 KDINILFNSLQYTNVVKDYWGNDLRYNKEYYMYNIDYLNRYMYANSRQIVFNTRRNNNDF 301
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TitteePro. TatkOlija): parcolijasi.
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01-ocr-2000 (TrEMBirel. 15, Last sequence update)
01-02-2001 (TrEMBirel. 19, Last annotation update)
Meurocoxin.
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Glostridiales: Racillus/Clostridium
Clostridiales: Clostridiaceae: Clostridium
NCBL[taxID=1491:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1254 NHEYLIPVIKIEHYASLLESTSTHWFVPASE 1285
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1128 KLYTGNPITIKSVSDKNPYSRILNGDNIILBMCINSRKWIIRDTDTIYATOGGECSONC 1187
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                                                                                                                                                357 IYALGLHBOTKDINDNIIFOIOPMNYTYYASOIFKSNFNGENISGICSI-GTYRFRIGG 415
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62 PIFPFDFKLGSSGEDRGKVIVTQNBNIVYNSMYESFSISFWIRINKW----VSNL--PGY 115
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 287 SRQIVFNTRRNN------DRNEGYKIIIKRIRGNT---NDTRVRGGDILYFDMIINNK 336
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Type 8 cryptic neurotoxin.
Clostridium botulinum.
Bacteria, Firmicutes; Bacillus/Clostridium group; Clostridia;
Clostridiales; Clostridiaceae; Clostridium.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1291 AA; 150843 MN; 7AC1737B0FA5A151 CRC64;
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01-DRC-2001 (TERMELTA). 19, Last sequence update)
01-MR-2002 (TERMELTA). 20, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                      1242 -- FKNAYTPVAVT--NYBTKLLSTSSFWKFI 1268
                                                                                                                                                                                                                                                                                                                                                    416 DWYRHNYLVPTVKOGNYASLLESTSTHWGFV 446
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STRAIN-593, AND 588;
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Valenchi composition of the 16s Coxin produced by a Clostifium Marchell. Gramma R. 20 Section 1. Statement of the 16s Coxin produced by a Clostifium Marchell. Gramma R. 20 Section 1. Statement Composition 1. 20 Section 1. Statement Composition 1. 20 Section 1. Section 1.
1072 SNEDINIVYEGQILRNVIKDYMGNPLKFETEYYIINDNYIDRYIAPKSNILVLVQYPDRS 1131
                                                                                                                                                                                         1132 KLYTGNPITIKSVSDKNPYSRILMGDNIMPHMLYNSGKYMIIRDTDTIYAIBGRECSKNC 1191
                                                                                                                                                                                                                                                                                                                                                                                             1192 VYALKLOSNIGNYGIG-IFSIKNIVSONKYCSQIFSSFR--KNTMLLADIYKPWRFSF-- 1246
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                                                                                            300 DFNEGYKIIIKRIRGNTNDTRVRGGDILYFDMTINNKAYNLFMKNETNYA----DNHSTED 356
                                                                                                                                                                                                                                                                                      357 IYAIGLREQTKDINDNIIPQIQPMNNTYYXASQIFKSNFNGENISGICSI-GTYRFRIGG 415
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01-NAY-2000 (TrEMBLrel. 13, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
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InterPro: IRRODALS; En_Propelse-
Pfan; PRO174; Peptidase, M27; 1.
PRINTS: PRO1604: BONCOXILISIN.
PRODER: PRO1945; BONTOXILISIN.
PRODER: PRO1945; BONTOXILISIN.
PROSER: PRO1845; BONTOXILISIN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          416 DWYRHNYLVPTVKQGNYASLLESTSTHWGFV 446
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NCBI_TaxID=29342;
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1222 OLLEKK--DRESTDEIGLIGIHRPYESGIVFKEYKDYFCISKWY-----LKEVKRKPYNS 1274
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .003 LGDSKLYINGNLIDKKSILNLGNIHVSDNILFKIVNCSYTRYI------GIRYFNIF 1053
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1166 YALTATTH -----KEKTIKISSSGHRPNOVVMNSVGNRCTMNFKNN-NGNN----- 1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             885 PINKNOF--GIYNDKLSEVNISQNDYIIYDNKYKNFSISFWVRIPNYDNKIVNVNNEYII 942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118 IDSVK-NNSGWSIGIISNFLVFTLKQNEDSBQSINFSYDISNNAPGY-NKWFFVTVTNNM 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176 MGNMKIYINGKLIDTIKVKELTGINFSKTITFEINKIPDIGLITSDSDNINMWIRDFYIF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236 AKELDGKDINILFNSLQYTWVKDYMCNDLRYNKEYYWVNI----DYLNRYMYANSRQIV 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              292 FNTRRN----NNDFNEGKKIIIKRI-RGNTNDIRVRGGDILYFDWTINNKAYNLFMKNETH 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      348 YADNHSIEDIYALGLREGIYKDIND - HIIFQIQPMNNTYYYASQIFKSNFNGENISGICS 405
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                                     389 Q-IPKSNFNGENISGICSIGIYRFRLGG-------DWYRHNYLVPTVKQGNYAS 434
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Matches 154; Conservative 91; Mismatches 154; Indels 69; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glostridium butyricum.
Bacteria, Pirmicutes, Bacillus/Clostridium group; Clostridia;
Clostridiales; Clostridiaceae; Clostridium.
KEB_Parallois; Clostridiaceae; Clostridium.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
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                                                                                                                                                                                                                                                                                                          1275 KL---GCNWOFIPKDE 1287
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01-MAR-2001 (IREMBLEEL 16
01-DEC-2001 (IREMBLEEL 17
Type E botulinum toxin.
                                                                                                                                                                                                             435 LLESTSIHWGFVPVSE 450
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CONTINUE OF PRESENTATION IN CREME AND PROPERTY OF THE PROPERTY OF
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                                                                                   1222 QILEKK--DEBSIDRIGLIGIHRFFBSGIVFKEYKDYFCISKWY----LKEVKRKPYNS 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 951 TIINCMKNNSOWKISIRGNMIIWTLIDINGKIKSVPFEYSIKEDISEYINRWPFVIITNN 1010
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 PIFPFDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKW----VSNL--PGY 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                995 D--KNOPKLTSSA--NSKIRVIQNQNIIFNSMELDPSVSFWIRIPKYKNDGIQNYIHNEY 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             116 TIIDSVKNNSGWSIGIISNFLVFTLKQNEDSEQSINFSYDISNNAPGY-NKWFFVTVTNN 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              175 MAGNAKIYINGKLIDTIKVKELIGINFSKTITFEINKIPDIGLITSDSDNIN----MRIR 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      231 DFYIFAKELDGKDINILFNSLQYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYMY ----AN 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     287 SRQIVENTRRNNN------DENEGYKIIIKRIRGNT---NDTRVRGGDILYEDMTINNK 336
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 835 SIPPDLSTYINNTILIEIFNKYNSDILNNIILNLRYRDNKLIDLSGYGAKVEVYDGVKLN 894
389 Q-IFKSNFNGENISGICSIGTYRFRLØG-------DWYRHNYLVPTVKQGNYAS 434
                                                                                                                                                                                                                                                           1275 KL---GCNWOFIPKDE 1287
                                                                                                                                                                       435 LLESTSTHWGFVPVSE 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
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Length 1255,

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Wang X., Masgawa T., Kozaki S., Taukamoto K., Gyobu Y., Yamakawa K., Kato E., Makamura S., Katasawa T., C. butytinum (LT.155) gene for type B betulinum toxin.'; shemitted (JAN-2000) to the BMSL/SenBank/DDBT databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-LCL 095;
Wang Y., Megawa T., Kozaki S., Tsukamoto K., Kato H., Nakamura S.,
Kanasawa T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wesney X., Mengewe I., Kozaki S., Tsukamoto K., Kato B., Makamura S., 
For butylicum (K. 1899) gene for type B botulinum toxin.;
Supmitted (ANA 2000) to the EXEL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wang X., Maegawa T., Kozaki S., Tsukamoto X., Kato H., Nakamura S.,
Karasawa T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aang X., Маедама Т., Когакі S., Твикашото X., Като Н., Nakamura S.,
Кагавама Т.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-KZ 1886.
Mang X., Meggawa T., Kozaki S., Tsukamoto K., Kato H., Nakamura S.,
Karesasar T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mang X., Маедама Т., Kozaki S., Tsukamoto K., Kato H., Nakamura S.,
Karasawa T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mang X., Maegawa I., Kozaki S., Tsukamoto K., Kato H., Nakamura S.,
Karasawa I.;
                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria: Firmicutes; Bactilus/Clostridium group; Clostridia;
Costridiales; Clostridiaceae; Clostridium.
NCBI_Taxib=149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "C. butyricum (KZ 1898) gene for type E botulinum toxin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "c. butyricum (KE 1886) gene for type E botulinum toxin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "C. butyricum (KZ 1889) gene for type B botulinum toxin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "C, butyricum (LCL 095) gene for type E botulinum toxin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "C. butyricum (KZ 1897) gene for type E botulinum toxin."; submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "C. butyricum (KZ 1887) gene for type E botulinum toxin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                         01.007+2000 (TERMBLrel. 15, Created)
01.007+2000 (TERMBLrel. 15, Last sequence update)
01.007-2001 (TERMBLrel. 19, Last annotation update)
Type E Doculium toxin.
                                                                             PRT: 1251 AA
                                                                                      PRELIMINARY:
                                                                                                                                                                                                                                                                                                                                                                Clostridium butyricum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SECUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SECUENCE FROM N.A.
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STRAIN-K2 1897;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SECUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SECUENCE PROM N.A.
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STRAIN-KZ 1890;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-KZ 1887;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-KZ 1889;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-LCL 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-KZ 1899;
                                                                                      09K395
RESULT 11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1011 -SDNAKIYINGKLESHIDIRDIREVIANDEIIFKLD------GNIDRTQFIWWK 1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 058 YPSIFWTELSOSNIEEIYXIOSYSEYLKDFWGWPLMYWREYYMFWAGWKNSYIKLKKDSP 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1118 VGELLTRSKYNQNSKYINYRDLYIGEKFIIRR-KSNSQSINDDIVRKEDYIYLOFFNLND 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177 EWRYY-----IYKYPKKEBEKLPLAPISDSDEFINIQIKEYDEOFIYSC 1221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1222 QLLFKK--DEBSTDRIGLIGIHRFYESGIVFKBYKDYFCISKWY-----LKEVKRKPYNS 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  175 MAGNAKIYINGKLIDIIKVKELIGINFSKIITFEINKIPDIGLITSDSDNIN----MWIR 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      231 DFYTFAKELDGKDINILFNSLQYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYMYANS--- 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 288 - ROLVENTRRNNN------DFNEGYKILIKRIRGNT----NDTRVRGSDILYFDMTINNK 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           337 AYNLFMKNBTMYADNHSTEDIYAIGLREQ7K----DINDNIIF----QIQPMNNTYYYAS 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      389 O-IFKSNFNGENISGICSIGTERFRIGG------DWYRHNYIVPTVKOGNYAS 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               835 SIPPOLSTYTHWFILLEBENKYNSDILNNIILMLRYRDNKLIDLSGYGAKVEVYDGVKLN 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62 PIPPPDFKLGSSGEDRGKVIVTQNENIVYNSMYESPSISFWIRINKW----VSNL--PGY 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                895 D--KNQFKLTSSA--NSKIRVIQNQNIIFNSMFLDFSVSFWIRIPKYKNDGIQNYIHNEY 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        116 TIIDSVKNNSGWSIGIISNELVFFLKQNEDSBQSINFSYDISNNAPGY-NKWFFVTVTNN 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25.2%; Score 602; DB 2; Length 1291;
33.7%; Pred. No. 9.7e-24;
tive 82; Mismatches 157; Indels 90; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 TIPPNIFSYTNNSLLKDIINEYFNNINDSKILSLONRKNTLVDTSGYNAEVSEBGDVQLN 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria, Firmicutes, Bacillus/Clostridium group, Clostridia,
Clostridiales, Clostridiaceae, Clostridium.
                                                                             -----THMRDNINSNGPPWNFI 1246
406 IGTYRFR----LOGDWYRHNYLVPTVKQGNYASLLESTSTH---WGFV 446
                                                                                                                                                                                                                                                                                                                                                        01-DEC-2001 (TrEMBLIFE). 19, Created)
01-DEC-2001 (TrEMBLIFE). 19, Last sequence update)
01-MR-2002 (TrEMBLIFE). 20, Last annotation update)
Neurotoxin type B.
                                                                                                                                                                                                                                                                                   PRT; 1291 AA
                                                                                                                                                                                                                               | 0.000711 | PRELIMENTED | 0.000711 | PRESENTED | 0.000711 | PRESENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1275 KL---GCNWQFIPKDE 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          435 LLESTSTHWGPVPVSE 450
                                                                                      1212 IGLIGERADTVVASTWY---
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AN STRIPPE A. COLLINE A. SERA A. A. THEOREM DELICE.

WAS ARRESTED A. COLLINE A. SERA A. A. THEOREM DELICE.

CONTINUE DENOLLINE WITH SERVICE A. 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        952 IINCMKNNSGWKISIRGNRIIWTLIDINGKTKSVFPEYNIREDISEYINRWFFVTITNN- 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .011 LDNAKIYINGTLESRMDIKDIGEVIVNGELTFKLD------GDVDRTQFIRMKKFSI 1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  836 IPPDLSTYSNIEILIKIFNKYNSEILNNIILNLRYRDNNLIDLSGYGAKVEVYDGYKLND 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63 IFPFDFKLGSSGEDRGKVIVTQNENIDYNSMYESFSISFWIRINKW----VSNL--PGYT 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        117 IIDSVRNNSGWSIGIISNFLYPTLKQNEDSEQSINPSYDISNNAPGY-NKWFFVTVTNNM 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        176 MGNMKIYINGKLIDTIKVKELTGINPSKTITFEINKIPDTGLITSDSDNIN-HWIRDFYI 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 IPPNIPSYTNNSLLKDIINEYFNNINDSKILSLQNRKNTLVDTSGYNAEVSEEGDVQLNP 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SIMILARITY: TO OTHER ZINC METALLOPROTEINASES IN THE ACTIVE SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               896 --KNOPKLTSSAD--SKIRVTQNQNIIFNSMFLDFSWSFWIRIPKYRNDDIQNYIHNEYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         87: Mismatches 159; Indels 84;
                                                                                                                                                                                                                                                                                                                                           Neurotoxin; Transmembrane; Hydrolase; Metalloprotease; Zinc.
SEQUENCE 1291 AA; 150513 MW; 718CAFE23D69FAAA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1291;
---YTHMRDHTNSNGCFWNFI 1242
                                                                                                                                                                                                                                     01-NOV-1996 (TTEMBIRE). 01, Last sequence update)
01-JUN-2001 (TTEMBIRE). 17, Last annotation update)
Botulinum neurotoxin type B (EC 3.4.24.=) (BONT/B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24.8%; Score 593; DB 2;
32.9%; Pred. No. 2.9e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIMES, PRO0760; BONTOXILISIN.
PRODOM; PD001963; BontoXILysin; 1.
PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1
                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000395; Bontoxilysin.
InterPro; IPR000130; Zn_MTpeptdse.
Pem; PP01742; Peptidas-N27; 1.
PRINTS; PR00760; BONTOXILYSIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN-EKLUND 178 ATCC25765;
MEDLINE-94122659; PUDMed=7764370;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X71343; CAA50482.1; -.
HSSP; P10845; 3BTA.
MEROPS; M27.002; -.
                                                                                                                                                                                                            01-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 152; Conservative
      1210 LIGERADIVVASIWY
                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                     BONT/B.
Clostridium botulinum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
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                                                                                                                                                  008077
                                                                                               RESULT 12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1051 DKELDETELQTLYSNEPNTNILKDFWGNYLLYDKGYYLLNVLKPNNFIDRRKDSTLSINN 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1111 IRSTILLANRLYSGIKVKIORVNDSSTNDRFVRKNDOVTINYISNSSSYSL-----YA 1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1164 DTWTTD-----KEKTIKSSSSONRFNOVVWNSVGNNCIMNPKNN-NGNN----IG 1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          882 PINKNOFILFNS--KPSEVNISQNDYIIZDNKYKNESISFWVRIDNYDNKIVNINEYII 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118 IDSVK-NNSGWSIGLISNFLVFFIKONEDSEQSINFSYDISNNAPGY-NKWFFVTVTNNN 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      940 INCMRDNNSGWKVSLNHNELIWTLQDNARINQKLVFKYGNANGISDYINKWIFVTITNDR 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176 MCNMKIYINGKLIDTIKVKBUTGINFSKTITFBINKIPDTGLITSDSDNINMWIRDFYIF 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         236 AKELDGKDINILPNSLQYTNVVKDYWGNDLRYNKEYYWVNIDYLNRYM--YANSROIVFN 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            294 TERN---NUDFNECKKILIKRIR-GNINDTRVRGGDILYFDMTINNKAYNLFMKNETMYA 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              350 DNHSTEDIYALGLREGT--KDINDNIIFQLQPMNNTYYASQIFKSNFNGENISGICSIG 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 822 SIPFKLSSYTDDKILISYFNKFFKRIKSSSVLNMRYKNDKYVDTSGYDSNININGEIFIY 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 PIPPPDPKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRI----NKWVSNLPGYTI 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94; Mismatches 156; Indels 66; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 TIPENIESYTNNSLLKDIINEYFNNINDSKIISLONRKNTLVDTSGYNAEVSEEGDVOLN 61
                                                                                                                                                                                        Wang X., Maegawa T., Kozaki S., Tsukamoto K., Kato H., Nakamura S.,
Karagawa T.;
                                                                                                                                                                                                                                                                                                                                                                                                                 Wang X., Maegawa T., Kozaki S., Tsukamoto X., Kato H., Nakamura S.,
Karasawa T.;
      Wang X., Maegawa T., Kozaki S., Tsukamoto K., Kato H., Makamura S.,
Karasawa T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "C. Negree (LC. 63) gene Cot type E bestiman cotts";
Smartred (LAN-260) to the DERL'Acedman/CHEN deteamen.
Derly Approxy. Respiration of the Company of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1251;
                                                               "C. butyricum (K2 1890) gene for type E botulinum toxin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                     "C. butyricum (X2 1891) gene for type E botulinum toxin.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  408 TYRER----LGGDWYRHNILVPIVKOGNYASLLESTSTH----WGFV 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 594; DB 2;
Pred. No. 2.5e-23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24.8t;
Best Local Similarity 32.2t;
Matches 150; Conservative 94
                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEROPS: M27,002;
                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-LCL 063;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
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1118 RORGIYSKTNIFSHARLYTGVEVIIRKV-GSTDFSNTDNFVRKNDTVYINVVDGNSEYOL 1176
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1058 IFNAELDKTEIETLYESEPDSTILKDFWGNYLLYNKKYYLLNLLKPNASVTKNSDILNIN 1117
298 NN------DENEGYKIIIKRIRGNT---NDTRVRGGDILYFDWTINNK-----AYNLFM 342
                                                                       287 QNSNYINYRNLYIGEKFIIRR-KSNSQSINDDIVRKEDYIYLDFFNSNREWRVAYKDFK 345
                                                                                                                                                                                                                      346 EREKKLVLANIYDSNEFYKTIOIKE -----YDEQPT----YSCQLLFKK-DEES 389
                                                                                                                                                                                                                                                                                                     400 ISGICSIGTYRFRLGG--------DWYRHNYLVPTVKQGNYASLLESTSTHWGFV 446
                                                                                                                                                                                                                                                                                                                                                                     390 TDEIGLIGIERFYESGIVLKDYKNYFCISKWY-----LKEVKRKPYNPNL---GCNWQFI 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  832 SIPFELSEYTNDKILIHILIRFYKRIIDSSILAMKYENNRFIDSSGYGSNISINGDIYIY 891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62 PIFFPDFKLGSSGEDRGKVIVTQNENIVYNSMYESFSISFWIRINKW--VSNLPG-TTII 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 892 STURNOFGIYSS--RLSEVNITGNNTIIYNSRYGNFSVSFWVRIPKYNNLKNLNNEETII 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119 DSVK-NNSGWSIGIISNFLVFTLKQNEDSEQSINFSY----DISNNAPGYNKWFFVTVTN 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       174 NAMONARIYINGKLIDIIKVKELTGINESKTITPEINKIPDIGLITSDSDNINGWIADFY 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      234 IFAKELDGKDINILFNSLQYTHVVKDYHGNDLRYNKEYYMVNIDYLNRYMYANSRQIVFN 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294 TRR-----NNNDFNEGYKIIIKRIRGNFN----DTRVRGGDILYFDMTINNKAYNL 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 TIPFNIFSYTNNSLLKDINEYFNNINDSKILSLQNRRNTLVDTSGYNAEVSEEGDVOLN 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Rucleotide sequence of the gene coding for Clostridium barati type metrotoxin Comparison with other dostridial neurotoxins."; FRRS Microbiol. Lett. 108175-182(1993).
                                                                                                                                                      343 KNE--TMYADNHSTEDIY-AIGLREQTKDINDNIIFQIQPMNNTYYYASQIFKSNFNGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23.8%; Score 569; DB 2; Length 1268;
32.7%; Pred. No. 5.1e-22;
ive 82; Mismatches 167; Indels 68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDINE-9325228; PubMed-8466245;
Mempson D.E., Hitson R.A., Bast A.K., Allaway D., Collins M.D.,
Richardson P.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Clostridium baratii.
astoeia, Firmicutes, Bacillus/Clostridium group, Clostridia.
Clostridiales, Clostridiacese; Clostridium.
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01-NOV-1996 (TrEMBLrel. 01, Last segu
01-DEC-2001 (TrEMBLrel. 19, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; X68262; CAA48329.1; -. HSSP; P10845; 3BTA.
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Matches 154; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Neurotoxin type F.
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                                                                               1062 PHTOLNOSHIKEIYKIOSYSEYLKDFWGNPLMYNKEYYMPNAGNKNSYIKLVKDSSVGEI 1121
                                                                                                                                                                                                                      1122 LIRSKYNONSNYINYRNLYIGEKFIIRRESMSQSINDDIVRKEDYIHIDIVLHHEEWRVY 1181
                                                                                                                                                                                                                                                                                                                                                             1182 AYKYFKEQEEKLFLSIISD --SNEFYKTIEIKE-----YDEQPS----YSCQLLF 1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1226 KK--DESTDDIGLIGIHRFFESGVLRKKYKDFFCISKWY----LKEVKRKFYKSNL-- 1276
235 PAKELDGKDINILFNSLOYTNVVKDYWGNDLRYNKEYYMVNIDYLNRYNY ----ANSROI 290
                                                                                                                                                      291 VENTERBENN -----DENEGYKIIIKRIRG--NINDIRVRGGDILVEDMIINK---- 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                    392 KSNFNGENISGIGSIGTERFIGG------DWYRHNYLVPTVKOGNYASILES 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Devery March 24 09; Score 525, np 2, Langth 441;

Construction 13.59; Pred No. 7, Ser.21;

Construction 151; Constructive 78; Mismatches 159; Indels 82; Caps

10 TYMESTACTINETREMITIONALIZACIONEMPT 171; PROPERT 69
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03.DSC-2001 (TERMBLEEL 19, Last annotation update)
BOtulinum neurotoxin type B (Fragment).
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Clones are derived from the Entamoeba histolytica HM1:IMSS sheared
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Tel: 301 838 0208
Fax: 301 838 3343
Email: bjloftusetigr.org
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                                              Contact; Revendon's Intervention
Department of EnAmyrotic Genomics
For Institute for Genomic Research
9712 Medical Center Dr., Rockville, MD 20850, USA
Fax: 301 88 3543
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233 TyrilePheAlaLys------237

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172 TyrMetValAsnIleAspTyrLeu---AsnArgTyrMetTyrAlaAsnSerArgGlnIle 290

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168 GTATATICAAIAAAGAAAAAATAAATGAAAAACTAAAGAAGAAGAGAG-----

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N. Fasandaum Bergine.

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//dism: "ARKs clone HP (gammtcoyte produce:)"
//dism: "Lb-"Pp clone H17, Tommaso Pace, Marta Ponzi, and Clare Proortal:
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/lab_host="Wistar rats"
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056PbC01 Pb CDNA #17, Tommaso Pace, Marta Ponzi, and Clara Frontall
Plasmodium berghel CDNA $', mRNA sequence.
         Urushihara, H., Tanaka, Y., Kohara, Y. and Shin-1, T.
Full length cDNA of Dictyostellum discoideum at the culmination
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/Schone_llb="blctypstellum discoldeum cDNA library, CF"
/Schone_llb="blctypstellum discoldeum cDNA library, CF"
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/strain-"AX4"
                                                                                                                                       umpublished (2007).
Umpublished (2007).
Contest For Genetic Resource Information
National Institute of Genetics
1111 Yates, Masham, Shizuoka 411-8340, Japan
Tel. 1559-81-858
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Location/Qualifiers
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delating a clone please content: L. David Sibley (sibley/dectim.wastl.edu), Washington University Sag primer: 400Pp from Gliboo. Sibley david ty sequence stop 424.

High quality sequence stop 424.

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GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd.

OM nucleic - nucleic search, using sw model Run on:

November 7, 2002, 11:55:50 ; Search time 2773 Seconda (Wilhout alignments) 14388,729 Million cell updates/sec 1 gaattcacgatgaccatccctctccgagtaataggaattc 1371 US-09-910-186A-9

4109280 Coring table: Dispuring AND Grapes 1.0 Graves 1.0 Grave Perfect score: Sequence:

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No. is the number of results predicted by chance to have a em_htgo_other:* Pred.

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ALIGNMENTS

DNA linear PHG 12-SEP-1993 for Cl neurotoxin.

CBCPHGC1 4479 bp Clostridium botulinum C phage gene X53751 X53751.1 GI:14905 RESULT 1 CBCPHGC1 LOCUS DBFINITION ACCESSION VERSION KEYWORDS SOURCE

Cl/meurotoxin; meurotoxin; toxin. Clostridium botulinum C phage. Clostridium botulinum C phage ORGANISM

To fosses 1 to 4479)

To fosses 1 to 4479)

Direct Edunisation

Direct Edunisation (39-201-1960) Popoff M.R., Institut Pasteur, Anaerobies, 25 rue du Docteur Roux, 75724 Paris Gedex 15, France Viruses. REFERENCE AUTHORS TITLE JOURNAL

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3819
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        versed by [1] 2 (bases 1 to 4475).
2 (bases 1 to 4475).
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/strain="phage from 468C botulinum C. strain"
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Submitted (24-SEP-1990)
Location/Qualifiers
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SASE COUNT 1869 a 460 c ORIGIN	Query Match Best Local Similarity 68.3% Matches 922; Conservative	Dy 13 ACCATCCCATTCACATCTTC	Qy 73 GAGTACTTCAACAACATCAAC 	Qy 133 TTGGTCGACACCTCCGGTTAC	Cy 193 CCANTCTTCCATTCGACTTC	253	Qy 313 TGGATCAGAATCAACAAGTGG 	Qy 373 AAGAACAACTCCGGTTGGTCC	Db 3207 AAAAATAACTCAGGTTGGAGT	Cy 433 CAGAACGAGGACTCCGAGCAG	Db 3267 CAAAATGAAGATAGTGAACAA	493			Qy 613 TCCAAGACCATCAACTTCGAG	Db 3447 AGCAAAACTATAACATTIGAA	Oy 673 TCCGACAACATCAACATGTGC	DD 3507 TCTGATAACATCAATATGTGG	Cy 733 AAGGACATCAACATCCTGTTC	Db 3567 AAAGATATTAATATTATT	Qy 793 GGTAACGACCTGAGATACAAC	DD 3627 GGAAATGATTTAAGATATAA	OY 853 TACATGTACGCCAACTCCAG	Db 3687 TATATGTATGGGAACTCACG		Db 3747 AATGAAGGATATAAAATTATA
RESULT 2	z	ACTESSION 199110. WRESTON 199110. REWRIGHT SELECTION 199110. REWRIGHT SELEC					Kinner of Microbiology Sapporo Medical College		S E-mail: nfujitanguts.nig.ac.jp@vax2.nim.nih.gov	Fax:	Ce	-35_signal 255260	0 -10_signal 293298	Sdo	/codon_start=1 /transl_table=11	/protein_id="BAA14235.1" /db_xref="G1:217781"	VLENDE ALLOON - MITTINNIN WEGDEVORMLEAULICHALLAMPERKAFELIGUIH VIPORFERNSHPHLINK PRAVIERKGGYDPWLIGTDSDAGTEKELIKLIKTEKELIKURE CHRISTORIA VARI GREVINGEN AVARDA MERINDERARKHRAGOONIN SERVINGEN AVARDA MERINTARA	GEELITIESTILEFUNNITETATETETUNGTENTITETUNGSKRIVATIOSITISSVILIG PREMITTIDETSTETKLINETÄÄDÄDEGEGALSIISIPREMITTSNATNIVGEGRESKSE STADDITTIAMINI VATATONOMI SENITEVETVILIKETYNENDE	TUDLIPERENTYPERALISETTEN TOTTEN TROUBERS TO STREET SELECTION TO ST	YDIQAGENIPKSHINTERGAGENPALEKVIPERMITTETTETTETTETTETTETTETTETTETTETTETTETTE	ECONGELLY NATIONE E SOLL SUN VILLE EN MACHINE DE VILLE PUN SI VOY * LEGALITE DE EQUIDILE PER SIDSERIL BERQUE PUR DAVONENNE Y VILSE OLL SUN VEDER PER SI PER I DAVONE VEDER EN METALACHOCIE DI MALA MANDEMATICATION DE VILLE PER I DAVONEN DE VENERAL PROPERTOR PORTUGATION DE VILLE PER I DAVONEN DE VENERAL PROPERTOR DE VILLE PER I DAVONEN DE VENERAL PROPERTOR DE VILLE PER I DAVONEN DE VENERAL PROPERTOR DE VENE	VSAILPYIGPALNISNSYRGUNTERFAUGUTILLERFPETIPALGARVISKVOE REKTIYTINII KOTTENEN DEVERMANGENISPITUONNI SYNNYDELIKOAAN KA	KIDLEYKKYSGSDKENIKSQYENLKNSLDVKTSEAMNTINKFIREGSYTLFKNALEK VIDELNEFERRYKAKITALLOSHNITINGKVAKKNAKSOMTI PRNIFSYTNNSL	LIKDLINEFPININDSKILELONRKNTLUDISCINEVSEEGDVQLNFIFPPDFKLGSS GEDRAKY VVONSHIVY NAWYSKETSTEMIT NAWYSKILDYSKINGARIGI	ISNPLVFTLKÖNEDSEQSINFSYDISNNAPGYNKWFFVTVTNNAMGMKLYINGKLID TIKVKELTGINFSKTITFEEINKIPDTGLITSDSDNINMATRDFYIPAKELLGKDINIL	FNSLQYTNVYXDYMGNDLRYXXEYYNVNIDYLNRYYY ANSRQIVFNT RRNNNDRNEGY

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTCTCCAACTTGCCAGGTTACACCATCATCGACTCCGTC 372
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATAAATAAATTCCAGATACCGGTTTGATTACTTCAGAT
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1053 AANGATATTAATATTATTAATAGCTTGCAATATACTAATGTTGTAAAAGATTATTGG 4112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1233 AATGAAGGATATAAAATTATAATAAAAGAATCAGAGGAAATACAAATGATACTAGAGTA 4292
                                                                                                                                                                                                                                                                                                                                1513 CCAATATTTCCATTTGACTTTAAATTAGGTAGTTCAGGGGAGGATAGAGGTAAAGTTATA 3572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              493 GOTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATC 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         553 TACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTC 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOCAAGACCATCACCITCGAGAICAACAAGAICCAGACACCGGICTGATCACCTCCGAC 672
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          733 AAGGACATCAACATCCTGTTCAACTGCTTGCAGTACACCAACGTCGTCAAGGACTACTGG 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          793 GGTAACGACCTGAGATACAACAGGGGTCAACAGGTCAACATCGACTACTTGAACAGG 852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133 TIGGICGACACCICCGGTIACAACGCCGAGGTCTCCGAGGAGGGTGACGTCCAGCTGAAC 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            253 GTCACCCAGAACGAGAACATCGTCTACAACTCCAFGTACGAGTCCTTCTCCATCTCCTTC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             313 TOGSTCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTCGTC 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             373 AAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTTCCTGGTCTTCACCCTGAAG 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        433 CAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACAACGCTCCT 492
                                                                                                                                                                                                                                                                                                                                                                                                                                73 GAGTACTICAACAACATCAACGACTCCAAGATCCIGTCCTGCAGAACCGTAAGAACACC 132
                                                                                                                                                                                                                                13 ACCATCCCATTCAACATCTTCTCCTACACAACAACTCCCTGTTGAAGGACATCATCAAC 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193 CCAATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATC
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                                          DB 1; Length 4712;
                                                                                                                                          Indels
                                          Score 665.2; DB 1;
pred. No. 1.5e-92;
0; Mismatches 428;
                                          48.5%;
                                                                                                Best Local Similarity 68.3
Matches 922: Conservative
                                                     Query Match
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Microbiennes, 28, Rue du Docteur-Roux, P-75724 Paris Cedex 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CBPHCNCIM A 4712 bp DNA 11near BCT 23-DEC-1993 C.botulinum phage C mutant gene for neurotoxin type C1.
                                                                                                                                                                                                           1092
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3866
                                                                                                                                                                                                                                                                                                                                                                                                           1093 CTGCGTGAGAGCAGACCAAGGACATCAAGGACAACATCATCATGCAGATCCAGACCAATGAAC 1152
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1273 TACTTGGTTCCAACTGTCAAGCAGGGTAACTACGCCTCCTTGGTGGAGTCCACTTCCACC 1332
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                                                                                                                                                                                                                                                     1153 AACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAAGGGTGAGAACATCTGC
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                                                                                                                                                                                                           ATGAAGAACGAGGATGTACGCCGACAACCACCACCAGGAGACATCTACGCCATCGG
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/strain="type C (non toxio)"
/sub_strain="AO28-CN phage"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene-'neurotoxin mutated gene'
/note-'intragenic stop-codon'
482 c 721 g 1602 t
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/codon_start=1
/transl_table=11
/db_xref="PID:e69305"
2463. .2465
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Clostridium botulinum
Bacteria; Firmicutes;
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/Lranslation="MSSERTFLPWGNYKIKSLESDSLYLTYSSGALSFSNTSSLDNGK MKLEVISSSNGFRESNYAEDRKLAYNDYGFTISSSSNBLNPFKIAINSYLICTL SIVNYDYZMYTDYDNNNITSDGFLANFPINNSNGILKLEKL" Compioment(560, .565)

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HGKERLITYCHKQAKIKUMPPPSILITUMAPPISSYSYKDOTNODNOWYLLLOYURS TITRYMMDHILOVINIDDITYOSTOSSNOFFKESNCITEALININGKLOTOLINS PRELSKNIKSOIIVANOPOSSOKWIIEYNSATIKOQENRYLTWIONSHYY

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VSAIIPYIGPALNISNSVRRGNFTBAFAVTGVTILLBAFPEFTIPALGAFVIYSKVQE RNETIKTIDNCIBORIKRMKDSYEMAMGTWISRITTOPNNISYOMYDSINYOAGAIKA

Duery Match

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3048 253

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UBFICNTC1 9689 bp DNA linear BCT 15-FEB-1999 Cilostridium botulinum phage 1C, CHn-14, CHn-33, Chn-138 and BONI/C1 X6633.1 GI:09271 X6633.1 GI:092721 GI:095144411 GONCOXXIA. CIOGETIGNO POLIJIGNO BECCETIGNO POLIJIGNO BECCETIGNO POLIJIGNO GI:0951613. GI:095174[18.08.; CIOSTIGIA:08.] Passer, Circleston Company, 1997, D. P. Rauser, Institut Pasteur, Unite des Domittee (25-947.1997) D. P. Rauser, Institut Pasteur, 28 rue dubocteur-Roux, P-79724 Paris George, FRANCE.

[Josephon/Chaliflers] 9007 973 AGAGGTGGTGACATGCTGTACTTCGACATGACTATCAACAAGAAGACGTACAAGGTGTTC 1032 3828 CGAGGAGATATTTTATATTTTGATATGACAATTAATAACAAAGCATATAATTTGTTT 8887 1092 1093 CTGCGTGAGCAGACCAAGGACATCAACGACAACATCATCTTCCAGATCCAGCCAATGAAC 1152 1153 AACACTTACTACTACGTTCCCAGATCTTCAAGTCCAACTTCAACGTGAGGTGACATCTCC 1212 9128 TATTTGGTGCCTACTGTGAAGCAAGGAATTATGCTTCATTAGAATCAACACTGAACT 9187 1213 GGTATCTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGGTGACTGGTACAGACACAAC 1272 TACTIGGITCCAACIGICAAGCAGGGIAACIACGCCICCTIGCIGGAGICCACTICCAGC 1332 913 AACGAGGGTTACAAGATCATCATCAAGGGTATCAGAGGTAACAGAAAGGAACGACAGAGTC 972 TACATGTACGCCAACTCCAGACAGATGGTGTTCAACACCAGACGTAACAACAACGACTTC 912 1033 ATGAAGAACGAGACCATGTACGCCGACAACCACTCCACCGAGGACATCTACGCCATCGGT 8948 TEARGAGAACAAACAAAGGATATAAATGATAATATTATATTCAAATACAACCAATGAAT /product "lakba protein associated with BONT /Ol-haemaggluthin complex" /protein_id="CAN47057.1" /organism-"Clostridium botulinum" /db_xref-"taxon:1491" Clostiddum.
1 (bases 1 to 90s.)
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WKLRYISSSNOFRFSNVARPNRYLAYNDYGFIYLSSSSNNSLWNPIKIAINSYIICTL
                                                                                                       'db_xref="SPTREMBL:045915"
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complement(642..647)
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complement(696..1556)
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complement(696..1556)
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. .1808,1819. .5409)

complement(1564. .1568) /gene="Chn-33" complement(1564. .1568) /gene="Chn-33" join(1803. .1808,1819. .56 /gene="CHn-138" 1819. 5406 /gene="CHn-138" 1803. .1808

gene gene RBS RBS

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gene

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BSGGEVTWRRKFTEL/NBLTOLFTERYRKIT WWORRLY LLSWYTEVTANTLDDW YD1080FBLIERNINKLEWOODLSSWERKWYDEWLYLPTRCHKAIDGRELYNKT DIORBELYKRYDLPFIGDISUWKTDIFLRKIJRBETEVITYPDNWSYDYLLSKRYES HOOLDLLYPSTIDSBEILDGRNOFFUDHRONDVLANSYYTLESOKLEDNVEDFTFTR STEELLDNSAKUTYFFUTANKVANGVOGGELMANDVYEDFTRILLEKITLIDKIS VSAIIDSYGRAHIISNSVRGNFFDRRYNGVTILLERAFREFI PALGARVITSKVOG VSAIIDSKOG RREIKTIDGERKRWKDSYBWWGTRISTOFNISYOWIDSLYYQAGAIKA KTOLEKSYSSOKSHSTSORRAKSKSLOVAISANGTARTESYYTUKSKICH YYDELWEDRWYKAKI NIIDSKHIIVGEVIKIAKWNMSCONTPRNISYTUNG LKOIINEFRNINDSKIISLQNRKWTLVOTSCYNARYSEBGDVQLNPIFFFDESS /translation="MPITINNFNYSDPVDNKNILYLDTHLNTLANSPEXAFRITGNIW VIPDRFSRNSNPNLNKPPRVTSPKSGYYDPNYLSTDSDKDTFLKELIKLFKRINSREI GEELLYRLSTDIPFPGNNNTPINTFDFDVDFNSVDVKTRQGNWWVKTGSINPSVIIIG PRENIIDPETSTFKLTNNTPAAQDGPOALSIISISPRFMLTYSNAINDVOBGRFSKSE PCMDFILLMBLRAMMENTVOIAIPNOTISSYENET "SOGYWEATRAINDR TROGP TIDLIPRARKYEEKALDYYSEIAKELNSTTPAAPSSPIKYTOEVKÖLIKKYRPV

BOTKDINDNIIPOIOPMNNTYYASOIFKSNFNGENISGICSIGTYRFRLGGDWYRHN YLVPTVKQGNYASLLESTSTHWGFVPVSE" 1359 q 3443 t 9385. .9424 /gene="BoNT/C1" 9385. .9424 /gene="BoNT/C1" /note-"putative" 1022 c 3865 a

BASE COUNT

ő Length 9689; Indels Score 665.2; DB 1; Pred. No. 1.4e-92; 0; Mismatches 428; Similarity 68.3%; Conservative 922: Query Match Best Local Matches 92

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Gaps

8310 AAAAATAACTCAGGTTGGAGTATAAGGTATAGTAATTAGTAATTTTTAGTATTTACTATAAAA 8369 8370 CAAAATGAAGATAGIGAACAAAGTATAAATTTTAGTTATGATATATAAATAATGCTCCT 8429 373 AAGAACAACTCCGGITGGICCATCGGIATCAICTCCCAACTTGCTGGICTTCACCCTGAAG CAGAACGAAGACTCCGAAGCAGTCCATCAACTTCTCCTAGGACATCTCCAACAACGCTCCT 433 8 à a ò g

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nlny foosfins ii pdrf snalkhfy rkoyy tadytdny ningfyngointklplsnkn Iniisk pekyynlynennislak sniy gdglkgytedfystyk ipyneeyey rfydsd KNYSFDINLTQEIDSMCGINEVLAFFGKALNILNTSNSFVERYQDSGAISLISKKDNL REPNIEIDDISDSLIGLSFKDLNNKLYEIYSKNIVYPKKIYFSFLDGAMTRYYSGYFE LICMAKOSILAOSSLVKOIVONKFTDLSKASIPPDTIKLIRETTEKTFIDLSNESOIS MNRVDNFLNKASICVFVEDIYPKFISYMEKYINNINIKTREFIORCTNINDNEKSILI NTILOY TESTELVYGWADSIYLKSPNETIKFSNKFFTNGITNNFTICFWLRFTOKND DKTRLIGNKVNNCGWEIYFEDNGLVFEIIDSNGNQESVYLSNIINDNWYYISISVDRL KDOLLIFINDKWANNSIDOILSIYSYNIISLWKNYSTYVBELSYLMPTTSBEYTR NESYLDNSYINDSKANDSKSLLEWNYNDLIWYPPETSLENSYNDNINGSYLSLKMYDGINI SSYKRYLIDESKYVYGKROECIICYLLOFFRYLDISPENNINGIOLYSKDRAKKITY translation="MDINDDLNINSPVDNKNVVIVRARKINTFFKAFKVAPNINVAPS" RYYGEPLDIAEBYKLDGGIYDSNFLSQDSERENFLQAIIILLKRINNTISGKQLLSLI TRIPPYGYIGGGYSSPHIPTPGKTPKSNKKLNSLVTSTIPFPFGGYRETNY IBSON NKNPYASNIVIPOPOSNIVENNVIYYKKNDAENGMGTMAEIVFOPLLIYKVNKPYIDP AMELTKOLIKSLIYFLYGIKPSONLVVPPRLRTELDNKOFSOLNIIDLLISGGVDLEFI NTNPYWPTNSY PPNSIKMPEKYKNIY KTEIEGNNA IGNDIKLRLKOKPOINVODIWNL NFPLNNISIBEVDSIPEIIDINPYKDNSDNLVFTQITSMTEEVTTHTALSINYLQAQI INNENFTLSSDFSKVVSSKDKSLVYSFLDNLMSYLBIIKNDGPIDTDKKYYLWIKEVF NSYTEKTIDEKELDIOSIKNEENSOVBOVMKBILSPYOLLLPASKGPNSNIIEDISGK VIDLERPDCITESYNDKYPSLSLRDGDYNWMICNDNNKVPKGAHLWILES" /product-"NTNHA" /protein_id="BAB71748.1" /db_xref="GI:16580758"

/protein_id="BAB71749.1" neurotoxin" /gene"nt" /codon_st** /gene-"nt"

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LESTSTHWGFVPVSE" 1622 9 1263 c

SASE COUNT

Gaps 13 ACCATOCCATTCAACATCTTCTCCTACAACCAACCAACTCCCTGTTGAAGGACATCATCAAC 48.5%; Score 665.2; DB 1; Length 11747; Ilarity 68.3%; Pred. No. 1.46-92; Conservative 0; Mismatches 428; Indels 0; Similarity Matches 922; Query Match ocal

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AAAGATATTAATATTATTATTAATAGCTTGCAATATACTAATGTTGTAAAAGATTATTGG 11029 CGAGGAGGAGATATTTTATATTTGATATGACAATTAATAACAAGCATATAATTTGTTT 11269 10370 TIRCTCGAIACAICAGGAIATAAAIGCAGAAGIGAGIGAAGAAGGCGAIGTICAGCIIAAI 10429 10430 CCAATATTTCCATTTGACTTTAAATTAGGTAGTTCAGGGGAGGATAGAGGTAAAGTTATA 10489 10730 GGATACAATAANTGGTTTTTTGTAACTGTTACTAACAATATGATGGGAAATATGAAGATT 10789 aatgaaggatataaaattataataaaagaatcagaggaatacaaatgatactactactagagta 11209 10550 TGGATTAGAATAAAAAAGGGTAAGTAATTTACCTGGATATACTATAATTGATAGTT 10609 10610 AAAAATAACTCAGGGTGGAGTATAGGTATTATTAGFAATTTTTGGTATTTAGTATTTACTTAAAA 10669 CTGCGTGAGCAGACCAAGGACATCAACGACAACATCATCTTCCAGATCCAGCCAATGAAC 1152 732 TGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTCCGTC 372 432 612 GGTAACGACCTGAGATACAACAAGAGTACTACATGGTCAACATGGACTACTTGAACAGA 852 TACATGIAGGCCAACICCAGACAGATCGICITCAACAGCAGACGIAACAACAACGACTIC 912 AACGAGGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACAACGACGACGAGGTC 972 TIGGICGACACCICCGGTTACAACGCCGAGGICFCCGAGGAGGGTGACGICCAGCTGAAC 10310 GARRITICAARARATATTAARGATTCAAAAATTTTGAGCCTACAAAACAGGAAAAAAATACT 193 CCAATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATC 253 GTCACGCAGAACGAGAACATGGTCTACAACTGCATGTACGAGTCCTTCTCCATCTCCTTC 373 AAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCCAACTTCCTGGTCTTCACCCTGAAG GGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATC 553 INCATCANCGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTC 613 TOCAAGACCATCACCTTGGAGATCACAAGATGCCAGACACAGGGTGTGATCACCTGGGAC TOCGACAACATGAACATGEGGATOGGTGACTTCTACATGTTGGGGAAGGAGTTGGAGGG AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTGGTCAAGGACTACTGG CAGAACGAGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCCAACAACGCTCCT 433 673 793 493 10970

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STRYFTSQOCTLLRKFYTYRT.DOTTVKTSKINNIN HYBYGTLLFYPMGLIYUN
SODSWRYFDKÖLLGYLLESSTSGSILQPRIRWYRRLFNTSHTIRSGRYFARRIN
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wkleyisssngfrfsnyaepnkylayndygfiylssssnnslwnfikiainsylictl
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NTIRNYMNENUTQNIDDLWYDTDZSSNOFFFSWCIYELHNRWCKLOTQUA
DRFLERNISQIIVLMQAPDSRQWIIEYMETGSAYTLKOQRNRYLITMIDRSNRY
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TNQOMINLT
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STAIPFPYGYIGGGYSSPNIFTFGKTPKSNRKLNSLYTSTIPPPFGGYRETNYIESON
                                                                                                                                                                                                                                 /db_xref="SNISS-PROT:P46085"
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                                                                                                                                                                                                                                                                                                                                                                                  SHISHNGCTAIVGDLRIRETATPYYYPTASFNERYIKNNVQNVFANFTBASEIPIGFE
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/translation="MDINDDLNINSPUDNKNYVIVRARKINTFFRAFKVAPNIWVAPE
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/db_xref="GI:516172"
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/transl_table=11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement(2801. .3241)
/gene=*ANTP-17*
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/gene=*ANTP-33"
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/gene="ANTP-33"
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/4411. .4416
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/transl_table=11
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4313. .>8017
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4427. R017
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/translation-"MNDLFFAIENLKHDNOHFNFIEMSLKKYIEKTSKKYNLYYDYYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12297 bp DNA linear PHG 27-JUL-1994 phage BONI/C1, ANTP-139, ANTP-17,
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Manniasiton of the betulinum deurotechin CJI gene and its associated mon-texit percetan genes in Clost-fidtum betulinum C 468 mon. Cen. Gene C. 243 (6), 631-660 (1994)
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IRITSLKKLYPIVMOLVNI"
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Toxines Microbiennes, 28, Rue du Docteur Roux F-75724, Paris Cedex
                                                                                                                                                                                         11390 AATACTTATTATTACGCATCTCAAATATTTAAATCAAATTTTAATGGAGAAATATTTCT 11449
                                                                                                                                                                                                                                                                                                                                                                                                             11450 GGAATATGTTCAATAGGTACTTATGGTTTTAGACTTGGAGGTGATTGGTATAGACACAAT 11509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11510 TATTIGGIGCCTACTGIGAAGGAAGGAAGAATTATGCTICATTATTAGAATCAACATCAACT 11569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1153 AACACTTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAACGGTGAGAGATCTCC 1212
                                                                                                                                                                                                                                                                                                                1213 GGTATCFGTTCCATCGGTACCTACAGATTCCGTCTGGGTGATGGTACAGACACAAC 1272
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/sub_species="type C"
/sub_xref="axon 35348"
/lab_host="Clostridium botulinum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db 11570 CATEGGGTTTTGTACCTGTAAGTGAATAA 11599
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/protein_id="CAA51308.1"
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WYFSYLDMSYTROSSKELLEYNKYOLTHVYPPETSLEWNDKNKYLGLKHTDGINI
SYKFRLINDSSKYYVOKNDOELTCYLDOFEKILDISPENNIQUESKYDANKKY
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//translation-"MPITINEWSOPVDWKNILYLDTHINTLANBPEKAFRITONIW
XIPORSENSWHANKLAKPPRYSPKSGYTOPWIGSDSDKOFFIKEIKLKRINSERI
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PRENIIDPETSTFKLTNNTFAAQEGFGALSIISISPRFMLTYSNATNDVGBGRPSKSE
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0; Mismatches 428
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7931. .>12032
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8032. .11907
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Best Local Similarity 63.35.

Owatches 922, Conservative
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Tachoriture, Fourbry of Standmurty, Tsaska 196, Absahiri, Bokkaido 
059-2983, Japan 82-mail: Organilo-industry, nodel, ac.jp., 
Tel. 81-152-48-388(ex.586), Fax:81-152-48-7940).
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AB037920 11631 bp DNA 11near BCT 24-JAN-2002 CLOstridium botulinum genes for ORF-22, BA-70, HA-17, HA-33, NYHBA, neuropoxia, complete cds.
                            BCT 24-JAN-2002
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KLBAVNYSLYCEDFEFLDLISILNYKEKOJIYMKFFECRKDNBIARRLHLSROSIYK
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AFNIQLFNTSTTLFKFVBBAPDNKNISMKAYNTYBKYELINYONGNIADKABYYLPSL
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NIPTSIQNNACYVLFTVNFTGV7KINAQNNLPPLIIYESIGSDAMNIQSNFLSNNNIK
                                                                                                                                 neurotoxin; WTWRA 18x-33; HA-17; BA-70; ORE-22.
Clostridium botulium (strain:0-4947) DNA.
Clostridium botulium (strain:0-2947) DNA.
Decteria; Firmioutes; Clostridia; Clostridiales; Clostridiaceae;
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In vitro reconstitution of the Clostridium botulinum type D
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21659747
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/translation-"Wiggtwand.rungspp? 2P PRINKULGA. WARRALTITURAKATI HYWYDTELLIHWADELSRYWYTDTNINKOWILLDOTISR WYLARHWAPLYLOJENDELLIHWADELSRYWYTDTNINKOWILLDOTISR WYLARHWAPLYLOJENDELLIH SPOTWSKATILYROJENSKY PRESENSELJOPHIWY JAGNESKYLIKYMOTWSTATILKOGENSKYLYVOSESRA PRYOSPOSLIOPHIWY JAGNESKYLIKYMOTWSTATILKOGENSKYLYVOSESRA

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BCT 18-DEC-2001 Direct Submission
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[E-mallisohi[8k]ken,csaka-u.ac.jp, felisl-6-6879-8343, 39-70-7848] neurotoxin consisting of botulinum neurotoxin D and Gl; neurotoxin Substraiam botulinum D (strain;South African) DNA. Glostridium botulinum D (strain;South African) DNA. Moritshi,K., Koura,M., Abe,N., Fujii,N., Fujinaga,Y., Inoue,K. and Ogunad,K. /product="neurotoxin consisting of botulinum neurotoxin 11268 ATGTATAAACCTTCTA----GAAATCTAGGGACTGATTTAGTTCCACTAGGTGCA 11318 11319 TEGGATCAACCAATGGATGAGATACGTAAATATGGTTCGTTTATAATACAACCATGCAAT 11378 11148 ANTGAAGGATATAAAATTATAATAAAAGAATTAGAGGAAATACAAATGATACTAGAGTA 11207 973 AGAGGTGGTGACATOCTGTACTTCGACATGACTATCAACAACAAGGCCTACAACGTGTTC 1032 1208 CGAGGAGAAATGTATTTTTAATACTACAATTGATAAAAACAATATATTTTAGGT 11267 1033 ATGAAGAACGAGCCATGTACGCCGACAACCACCGAGGACATCTACGCCATCGT 1092 1093 CTGCGTGAGCAGACCAAGGACATCAACGACAACATCTTCCAGATCCAGGCCAATGAAC 1152 ACTETTGATTACTATGCATCACAATTATTTTGTCAAGTAATGCAACAACAAAATAGGCTT 11438 1213 GGTATCTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGAC---TGGTACAGACAC 1269 11439 GGAATACTATCAATIGGTAGTTATAGTTICAAACTIGGAGAIGACTATIGGTTTAATCAC 11498 11499 GANTATITAATTCCIGTTATAAAATAGAGCATTATGCTTCATTAITAGAATCAACATCA 11558 1270 AACTACTTGGTTCCAACTGTCAAGCAGGGTAACTACGCCCTCCTTGCTGGAGTCCACTTCC 1329 Clostridium botulinum type D gene for neurotoxin consisting of botulinum neurotoxin D and Cl. complete cds. 1153 AACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAAGGGGGAGAACATCTCC Mosaic structures of neurotoxins produced from Clostridium linear botulinum types C and D organisms Biochim. Biophys. Acta 1307 (2), 123-126 (1996) 11559 ACTCATTGGGTTTTTGTACCTGCAAGTGAATAATAAGT 11599 1330 ACCCACTGGGGATTCGTCCCAGTCTCCGAGTAATAGGAATT 1370 å /organism="Clostridium botulinum DNA /strain="South African" 4049 bp /db_xref-"taxon:36829 Location/Qualifiers /transl_table=11 /codon start=1 D38442.1 GI:1374775 2 (bases 1 to 4049) Moritshi, K. .4020 6909 Clostridium. 96283801 CLOTNCO DEFINITION DRGANISM 11379 REFERENCE AUTHORS ACCESSION VERSION TITLE REFERENCE TOURNAL MEDI INE SESULT 9 FRATURES CDS TITLE SOURCE q 9 90 용 ò g ö a ä ô ò

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11028 GGAAATGATTTAAGATATGATAAAGAATATTACATGATTAACGTAAATTATGTAAGATAGA 11087

853 TACATGTACGCCAACTCCAGACAGATCGTCTTCAACACCAGAGGTAACAACAACGACTTC 912

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5 12; Gaps 13 ACCATCCCATTCAACATCTTCTCTACACAACAACTCCCTGTTGAAGGACATCATCAAC 72 DB 1; Length 4049; Score 448.2; DB 1; Length 4 Pred. No. 2.6e-59; O; Mismatches 543; Indels

73 GAGTACTTCAACAACATCAAGACTCCAAGATCCTGTCCTGCGGAACGGTAAGAACACC 132

133 TIGGTCGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCCAGCTGAAC 192

2797 TTGATGGATACATCAGGATATAAGGCAGAAGTGAGAGTAGAAGGCAATGTTCAGCTTAAT CCANTCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGGACGACGTCATC

2857 CCAATATTTCCATTTGACTTTAAATTAGGTAGTTCAGGGGATGATAGAGGTAAAATTATA

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253 GTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCCATCTCCTTC 313 TGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTCCGTC

AAAAATAACTCAGGTTGGAGTATAGGTATTATTAGTAATTTTTAGTGTTTACTTTAAAA 3096 AAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTTCCTGGTCTTCACCCTGAAG

3036

CAGAACGAGGACTCCGAGCAGTCCAACTTCTCCTACGACATCTCCAACAACGCTCCT 097 CAAAATGAAAATAGTGAACAAGATATAAACTTTAGTTATGATATATCAAAGAATGCTGCG GGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATC 433 - 64

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3157 GGATATAATAATGGTTTTTTGTAACTATTACTACCAATATGATGGGAAATATGATGATGATT 3216

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3217 TATATAAATGGAAAATTAATAGATAC?ATAAAAGTTAAAGAGTTAACTGGAATTAATTTT 3276 TCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGGTCTGATCACCTCCGAC 672 553 TACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACGGGTATCAACTTC

AATGAAGGATATAAAATTATAATAAAAAGAATTAGAGGAAATACAAATGATACTAGAGTA 3636 9696 1092 3807 3337 TCTGATAAGATGAATATGTGGATAAQGGATTTTTATATGTTTGGTAAGAATTAGATGAT 3396 1397 AAAGATATTAATATTATTAATAGCTTGCAATATACTAATGTTGTAAAAGATTATTGG 3456 ATGIATAAACCTICTA----GAAATCIAGGGACTGATTIAGTICCACTAGGTGCA 3747 GGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGA 852 TACATGTACGCCAACTCCAGACAGATCGTCTTCAACAGCCAGACGTAACAACAACGACTTC 912 673 TECGACAACATCAACATGIGGATCEGIGACTTCTACATCTTCGCCAAGGAGTTGGACGGT 732 973 AGAGGIGGIGACAICCIGIACIICGACAIGACIAICAACAACAAGAGGCTACAACIGIIIC TTGGATCAACCAATGGATGAGATAAGTAAATATGGTTCGTTTATAATACAACCATGCAAT 733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAAGGTCGTCAAGGACTACTGG 913 AACGAGGGTTACAAGATCATCATCAAGGGTATCAGAGGTAACACCAACGACACCAGAGTC 1033 ATGAAGAACGAGACCATGTACGCCGACAACCACTCCACCGAGGACATCTACGCCATCGGT CTGCGTGAGCAGACCAAGGACATCAACGACATCATCTTCCAGATCCAGCCAATGAAC 853 1093 8748 g g g 8 a ð g ö 8 ð g ð à ò

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1153 AACACTTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAACGGTGAGAACATCTGC 3808 ACTUTIGATURCIATGCATCACATATTATTTTGTCAAGTAATGCAACAAATAGGCTT 1213 GGTATCTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGGTGAC---TGGTACAGACAC

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Eukaryota, Metazoa, Chordata; Craniata; Vertebrata, Euteleostomi; Nammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murimae; Rattus norvegicus Rattus ORGANISM REFERENCE

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internation of the control of the co Rattus norvegicus Bukaryota; Wetazoa, Chordata; Craniata; Vertebrata; Buteleostomi; Rommalia; Euripaia, Rodeniia; Sciurognathi; Muridae; Murinae; Norway rat. DEFINITION AC117007/c ORGANISM ACCESSION VERSION KEYWORDS SOURCE REFERENCE AUTHORS LOCUS ö 957 CAACGACAGCAGAGTCAGAGGTGGTGACATCCTGTACATCGACATGACATCAACAACAA 417 GGTCTTCACCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACAT 476 477 CICCARCACGCICCIGGITACAACAAGIGGITCTICGICACGGICACCAACAACAIGAT 536 597 GACCGGTATCAACTTCTCCAAGACCATCACTTCGAGATCAACAAGATCCCAGACACCGG 656 657 TCTGATCACCTCCGACACCTCCACACATCTGTGAACATCCGTGACTTCTACATCTTCGC 716 717 CAAGGAGTIGGACGGIAAGGACATCAACAIGCIGTICAACTCCTIGCAGIACACCAACGI 776 777 CGTCAAGGACTACTGGGGGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACAT 836 837 CGACTACTIGAACAGATACAIGTACGCCAACTCCAGACAGATCGTCTTCAACACCCAGACG 896 897 TRACAACAACGACTTCAACGAGGTTACAAGATCATCAAGCGTATCAAGGTAACAC 956 297 CITCIOCAICICCIICIGGAICAGAAICAACAAGIGGGICICCAACIIGCCAGGIIACAC 356 357 CATCATCGACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTTCCT 416 537 GGGTBACATGBAGATCTACATCBACGGTBAGCTGATCGACACATCBAGGTCBAGGAGTT 596 237 CAGAGGTAAGGTCATCGTCACCCAGAACGAGAAAGTCGTCTACAACTCCATGTACAGTC 296 Best Local Similarity 49.68; Pred. No. 7.7e-20; Matches 483: Conservative 0; Mismatches 490; Indels

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MARINE 10 1978 AND STATE OF THE Companished Transcription of the Submitted (17-JUL-2002) Human Genome Sequencing Center, Department of Mojecular and Human Genetics, Baylor College of Medicine, One maylor Plaza, Houston, TX 77030, USA maylor Plaza, Houston, TX 77030, USA On Jul 14, 2002 this sequence version replaced 91:20136787. Center: Baylor College of Medicine Center code: BCM Direct Submission TITLE JOURNAL REFERENCE AUTHORS AUTHORS TITLE EFFRENCE JOURNAL COMMENT

Web site: http://www.hqsc.bcm.tmc.edu/

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QQ g Contact: hase-help@bcm.tmc.edu

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52228 ACARCARCARCARCACACACACACARCARCARCA	476 TCTCCAACAACCTCCTGGTTACAACAGTGCTTCTTCGTCACGTCACGTCAACAACAGAAGA	536 TOSSTANCATEANORICTHOLITICAL CONTROL CONTROL CANCERCON STANDORICA AGAINST A CANCERCON ACANCERCON	596 TOACCOOFWICHACTTCTCCHAGACCATCACCTCGAGATCAACAAGATCCCAACAACACCO	656 GTGTGATCACCECCGACTCCGACACACACACTGGGGATCGGTGCTTCTACATCTTCG 52288 ACAACACACACACACACACACACACACACACACACAC	716 CGARGGAGTTGGACGGTAAGGACATCACATCTGTTCAACTCCTTGCAGTACACAACG 1	776 TOSTCARGACTACTEGGGTAACGACTGAGATACAACAACAAGAGTACTACAAGGGTCAACA 1 1 1 1 1 1 1 1 1 1	836 TCGACZACTTGAACAGATACATGTAGGCCAACTCCAGACAGTGGTCTTCAACACCAGAC 1	896 GTAACAACAACTCAACGAGGTTACAAGATCATCAACAGGTATCAACAGGTATCAACAACAACAACAACAACAACAACAACAACAACAAC	956 CCAACGACACGAGAGTCAGACGTGACATCCTGTACTTCGACATGACTATCAACAGA 1111 1 1 1 1 1 1 1 1	1016 AGGCCTACAACTTGTTCATGAAGAAGAAGACAACAGTGTACGGCGACAACAACAACAACAAGAAGA 51978 GCAACAACAACAACAACAACAACAACAACAACAAAAAAAA	1076 ACATCZACGGCATCGGGTCTGGGGTGACGAGGACATCAACGACAACCAAC	1136 AGATOCAGOCAATGAACAACCTACTACTACCACTCCCCAGATCTTCAAGTCCAACTTCA 51808 CDACCAACAACAACAACAACAACAACAACAACAAAAAAAA	1196 ACGGTGAGAACATC 1209 51748 ACAGCAACAACAS 51735
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GACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTT 413 Indels Score 180.2; DB 2; Pred. No. 1.7e-18; 0; Mismatches 418; servative

ACCOMBAGGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGA 473 PACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAT 533

ATGAAGATCTACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGA 593

ACCTCCGACTCCGACAACATCAACATGCGATCCGTGACTTCTACATCTT 713

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CCAATGAACAACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTT 1193

MCMACAGCAACAGCAACAACAACAACAACAACAACAACAGCAACAGCAA 154474

AACAGCAACAGCAAC 154389 AACATCTCCGGTATC 1218

165337 bp DNA 11near HTG 11-JUL-2002 Norvegicus clone CH230-23N22, *** SEQUENCING IN PROGRESS ***, 68 unordered pieces.

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Muzny, D.M., Adams, C., Adio-Oduola, B., Ali-osman, F.R., Allen, C.,	
Alsbrooks, S. L., Amaratunge, H.C., Are, J.R., Ayele, M., Banks, T., Barbarte, J. Benton J. Bimane X. Blankenhura, K. Bonston J.	
Bouck, J., Bowle, S., Brleva, M., Brown, E., Brown, M., Bryant, N.P.,	
Buhay, C., Burch, P., Burkett, C., Burrell, K.L., Byrd, N.C., Carron, T.F., Carter, M., Cavazos, S.R., Chacko, J., Chavez, D.,	
Chen, G., Chen, R., Chen, Z., Chowdhry, I., Christopoulos, C.,	
Cleveland.c.b., Cox.c., Coyle, M.D., Dathorne, S.K., David, K., Davida.M.T., Davie, C., Davy-Carroll.E., Dederich.D.A.	
Delaney, K.R., Delgado, O., Denn, A.L., Ding, Y., Dinh, H.H.,	
Douthwaite, K.J., Draper, H., Dugan-Rocha, S., Durbin, K.J., Earnhart, C., Edgar, D., Edwards, C.C., Elbal, C., Recotto, M.	
Falls, T., Ferraguto, D., Flagg, N., Ford, J., Foster, P., Frantz, P.,	
Gabisi, A., Gao, J., Garcia, A., Garner, T., Garza, N., Gill, R.,	
GOTTELLJJ.H., GUSVSTS.W., GUBSTSTDE.F., HSLESS.J., HSHLETON.K., Harris.C., Harris.K., Harr.M., Havlsk.P., Hskes.A., Herbshdez.J.,	
Hernandez, D., Hodgson, A., Hogues, M., Holloway, C., Hollins, B.,	
Homsi.F., Howard.S., Huber.J., Hulyk.S., Hume.J., Jackson,L.E.,	
Karlsson, E., Kelly, S., Khan, U., King, L., Korvah, J., Kovar, C.,	
<pre>Kratovic,J., Kureshi, A., Landry, N., Leal, B., Lewis, L.C., Lewis, L., 11 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1</pre>	
Lozado, R.J., Lucherge, O., Lieu, C., Lucker, R., Lucker, Ma.J.,	
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Miner, G., Miner, Z., Mitchell, T., Mohabbat, R., Mordan, M., Morris, S.,	
Moser, M., Neal, D., Newtson, J., Newtson, N., Nguyen, A., Nguyen, N.,	
Nguyan, N., Nickerson, E., Nwokenkwo, S., Ogun, M., Okruonu, G., Oraqunye, N., Oyledo, R., Pace, A., Payton, B., Peery, J., Perez, L.,	
Peters, L., Pickens, R., Primus, E., Pu, L. L., Quilles, M., Ren, Y.,	
Scherer, S., Scott, G., Shen, H., Shooshtari, N., Sisson, I.,	
Scdergren, E., Sonaike, T., Sparks, A., Stanley, H., Stone, H.,	
Sutton, A., Svatek, A., Tabor, P., Tamerisa, A., Tamerisa, K., Tang, H., Tangey, J., Taylor, C., Taylor, T., Telfrod, B., Thomas, N., Thomas, S.,	
Usmani, K., Vasquez, L., Vera, V., Villalon, D., Vinson, R., Wang, O.,	
Williams, G., Williamson, A., Wleczyk, R., Wooden, S., Worley, K.,	
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689 TGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGTAAGGACATCAACATCC 748 749 TGTTCAACTCCTTGCAGTACACCAACGTCGAAGACTACTGGGGGTAACGACCTGAGAT 808 758 TGTACGACAACCAAGTCCAAATCTGGTAACCTGAAAGACTTCTGGGGTGAACTACCTGCAGT 817 809 AGAACAAGDAOTACTTACATGGGCAACATCGACAACAGATACATGGACGAAC 867 AGGACABACGTACTACAGGGGAACTGTACGATCCGAACABATACGTTGACGTCAAC 976 43 CONFECTION CONFECTI

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Botulism toxin hea DAM smoother synth Clostridum botulis Clostr	111 AMERICA AMERICA AMERICA 112 AMERICA AMERICA AMERICA 113 AMERICA AMERICA AMERICA 113 AMERICA AMERICA AMERICA 113 AMERICA AMERICA AMERICA 113 AMERICA AMERICA AMERICA 114 AMERICA AMERICA AMERICA 115 AMERICA AMERICA AMER	
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Copyright (9) 1895 - 2002 Compusen Ltd. - nuclaic search, waing aw model November 7, 2002, 11:02:35; search time 23; seconds 1200-910-186x-9 1200-317 Million cell updates/sec	1165239 seq. 1123 1165239 seq.	30.6 1374 22 AAA54487 15.9 1347 21 AAE87217 15.9 1368 22 AAA54491
OM nucleic - nu Run on: Title: Perfect score: Seguence:	0008 - 39 - 39 - 39 - 39 - 39 - 39 - 39 - 3	

481 AACAACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGT 540

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Smith L;
                                                                  Lee JS, Pushko P, Smith JF, Parker M, Dertzbaugh MT,
(USME-) US MEDICAL RES INST INPECTIOUS DISEASES
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Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against

Disclosure; Page 41-42; 54pp; English.

The investic victure is considered, includes the include to proceedings and considerable with the investic victure and considerable. The response against benefit in memorated (1867) according to the considerable with the preference of the investic of the ventor is accorded to the considerable with the considerable with the considerable with the preference of the investic of the ventor is accorded to the considerable with the considerabl THE CONTRICTION AND THE CO

Sequence 1371 BP; 397 A; 416 C; 265 G; 293 T; 0 other;

100.0%; Score 1371; DB 21; Length 1371; 100.0%; Pred. No. 4.1e-289; ative 0; Mismatches 0; Indels 0; Gaps

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1141 CAGCCAATGRACAACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAACGGT 1200 1201 GAGAACAFCTCCGGTA7CTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGGTGACTGG 1260 GAGAACATCTCCGGTATCTGTTCCATCGGTACCTACAGATCCGTCTGGGTGGTGACTGG 1260 TACAGACACAACTACTIGGTTCCAACTGTCAAGCAGGGTAACTACGCCTCCTTGCTGGAG 1320

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24.1 GGTAAGGTCATCGTCACCAGAACGAGAACATCGTCTACAACTCCCATGTACGAGTCCTTC 300 TCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATC 360 301 TCCATCTTCTTGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATC 360 301

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961 GACACCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAAGGCC 1020 1021 TACAACCTGTTCATGAAGAACGAGACCATGTACGCCGACAACCACTGCACGGAGGACATC 1080 CAGCCAATGAACAACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAACGGT 1200 961 GACACCAGAGTCAGAGTGGTGACATCCTGTACTTCGACATGACTATCAACAACAAGGCC 1020 780 9 999 661 ATCACCTCCGACTCCGACAACATCTGGATCCGTGACTTCTACATCTTCGCCAAG 720 900 541 AACATGAAGATCTACATCAACGSTAAGCTGATGGACGCACCATCAAGGTCAAGGAGTTGACC 541 AACATGAAGATCTACATCAACGGTAAGCTGATGGACACCATCAAGGTCAAGGAGTTGACC GGIATCAACTICTCCAAGACCATCACCTICGAGAICAACAAGAICCCAGACACGGICTG GAGTIGGACGGIAAGGACATCAACATCCIGIICAACICCIIGCAGIACACCAACGICGIC 781 AAGGACTACTGGGGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGAC 341 TACTTGAACAGATACATGTACGCCAACTCCAGACAGATGGTGTTCAACACGCAGACGTAAC 841 TACTIGAACAGATACAIGTACGCCAACTCCAGACAGATGGTCTTCAACAGCAGGACGTAAC 901 AACAACGACTICAACGAGGGITACAAGATCATCATCAAGCGIATCAGAGGIAACACCAAC 27 g ò 8 ð 셤 ò a à a ä a à 8 ò 셤 à a ò 8 à

AAA54486 standard, DNA; 1371 MAS4486 g

TCCACTTCCACCCACTGGGGATTCGTCCCAGTCTCCGAGTAATAGGAATTC 1371 1321 TCACTTCACCCACTGGGGATTCGTCCCCCAGTAATAGGAATTC 1371 BP.

11-APR-2001 (first entry)

AAA54486:

Botulism toxin heavy chain C-terminal Coding sequence (serotype C). Botulism, toxin, neurotoxin, heavy chain, recombinant expression, recombinant vector, antigen, immune response, vaccine, bacterium,

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1021 TACAACCTGTTCATGAAGAACGAGACCATGTACGCCGACAACCACTCCACCGAGGACATC 1080
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241 GGTAAGGTCATCGTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTC 300
                                                                                                                                                           241 GGTAAGGTCATCGTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTC 300
                                                                                                                                                                                                                                 TOCATCTCCTTCTCGGATCAGAATCAACAACAAGTGGGTCTCCAACTTGCCAGGTTACACATCATC
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the heavy chain of boundaum meurocoxin of serotype A-G, useful as
vaccine squing boundam
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (USSA ) US ARMY MEDICAL RES & MATERIAL COMMAND.
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/product= H_C peptide fragment
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10..1362
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990S-0133869.
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Matches 1371; Conservative
                                                               Synthetic.
Clostridium botulinum
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                                                                                                                                                                                                                                                                                                                             W0200067700-A2
infection; ds.
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12-MAY-1999;
12-MAY-1999;
12-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-MAY-1999;
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                                                                                                                                                                                                                                                                                                                                                                                            16-NOV-2000.
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1261 TACAGACACAACTACTTGGTTCCAACTGTCAAGCAGGGTAACTACGCCTCCTTGCTGGAG 1320
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termed Teach' (see AAYDSEA). In Which aims sails size-25 olu-250

the 18 of 25 of 18 of 25 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Modified toxin useful for systemic delivery of oral vaccines and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 48.5%; Score 665.2, DB 20; Length 3950; Best Local Similarity 68.3%; Pred. No. 3e.135; Models 922; Conservative 0; Matches 922; Conservative 0; Manches 423; Indels 0;
                                            1321 TCCACTTCCACCCACTGGGGATTCGTCCCAGTCTCCGAGTAATAGGAATTC 1371
                                                                         1321 TCCACTTCCACCCACTGGGGATTCGTCCCAGTCTCCGAGTAATAGGAATTC 1371
                                                                                                                                                                                                                                                                                                                                                                                              Botulinum toxin; botulism; rBoNT/C; vaccine; drug delivery;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3950 BP; 1589 A; 410 C; 616 G; 1335 T; 0 other;
                                                                                                                                                                                                                                                                                                                                             DNA coding for modified botulinum toxin rBoNT/C.
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32..3907
                                                                                                                                                                                                         AAX25521 standard; DNA; 3950 BP
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                                                                                                                                                                                                                                                                                                      02-AUG-1999 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Clostridium botulinum.
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SISB AGCAAACTATAACATTTGAAATAAATAAATTCCAGATACGGTTTGATTACTTCAGAT 3217 3218 TCTGATARCATCAATATGTGGGATAAAGAGATTTTTATATATTTGCTAAAGAATTAGATGGT 3277 3278 AAAGATATTAATATTAATAGCTTGCAATATACTAATGTTGTAAAGATTATTGG 3337 3457 3458 ANTGARGGATATAAAATTATAATAAAAGAATCAGAGGAAATACAAATGATACTAGAGTA 3517 973 AGAGGEGETGACATCCTGTACTTCGACATGACTATCAACAACAACAAGGCGTACAACCTGTTC 1032 5518 CGAGGAGGAGATATTTATATTTTGATATGACAATTAATAACAAAGCATATAATTTGTTT 3577 1093 CIGCGIGAGCAGACCAAGGACAICAAGGACAACAICAICTICCAGAICCAGCCAAIGAAC 1152 3638 TIAAGAGAACAAACAAAGGAIAIAAATGAIAATAITAITAITICAAAIACAACCAAIGAAT 3697 1153 AACACTTACTACTACGACTTCCCAGATCTTCAAGTCCAACTTCAACGGTGAGAACATCTCC 1212 2798 GTARCCCAGARGAAAATTGTATATATTCTATGTATGTATGTATGTATTAGCATTAGTTTT 2857 2918 AAAAATAACICAGGIIGGAGIAIAAGIATTATIAGIAATTITIAGIAITITACITIAAAA 2977 978 CAAAATGAAGATAGTGAACAAAGTATAAATTTTAGTTATGATATCAAATAATGCTCCT 3037 852 2618 GAATATITCAATAATAATGAITCAAAAATITIGAGCCTACAAAACAGAAAAATACT 2677 2738 CCANTAITICCATITIGACTITAANITAGGTAGTICAGGGGAGGATAGAGGTAAAGTTATA 2797 492 553 TACATCAACGGTAAGCTGATGGACACCATCAAGGTGAAGGAGTTGACCGGTATCAACTTC 612 513 TCCAAGACCATCACCTTCGAGATCAAGAATCCCAGACACCGGTCTGATCACCTCCGAC 672 673 TCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGT 732 733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACGTCGAACGTCGAAGGACTACTGG 792 913 AACGAGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACACCAGAGTC 972 253 GTCACCCAGAACGAGAACATCGTCTACAACTCCATGTAGGAGTCCTTCTCCATGTGCTTC 312 313 TGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTCCGTC 372 373 AAGAACAACICCGGTIGGTCCAICGGTATCATCTCCAACITCCIGGTCTTCACCCTGAAG 432 493 GGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATC 552 TIGGICGACACCICCGGIIACAACGCCGAGGICICCGAGGAGGGIGACGICCAGCIGAAC 192 1033 ATGAAGAACGAGACCATSTACGCCGACAACCACTCCACCGAGGACATCTACGCCATCGGT 793 GGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGA 853 INCHIGIACGCCAACTCCAGATCGTCTTCAACACCAGACGTAACAACAACTC CCAATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATC 433 CAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACGCTCCT

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1213 GGTATCTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGGTGACTGGTACAGACACAAC 1272
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3758 GGAATATGTTCAATAGGTACTTATGGACTTGGAGGTGATTGGTATAGACAAT 3817 1273 TACTIGGITCCAACTGICAAGCAGGGIAACTACGCCICCTIGCIGGAGTCCACTTCCACC ð.

AAV30588 standard; DNA; 1502 BP.

AAV30588;

07-DEC-1998

Clostridium botulinum type Cl toxin C fragment gene in pETHisb. (first entry)

Antitoxin; vaccine; neurotoxin; toxin C; intoxication; immunogen; botulism; BotC; ds.

Clostridium botulinum serotype Cl Stockholm strain. Synthetic.

Ocation/Qualifiers 108..1463

W09808540-A1.

97WO-US15394 18-AUG-1997; 05-MAR-1998.

96US-0704159. (OPHI-) OPHIDIAN PHARM INC. 8-AUG-1996;

halley BS, Williams JA;

WPI; 1998-230234/20. P-PSDB; AAW68397. Most cell containing recombinant expression wettor encoding Chostratium bothinm type nor z town - useful to treet I to other animals at risk of incoxtemtion with chostratial

humans

Example 46: Page 339-341; 428pp; English.

This is the DDA separate of the Controlland Postlinian extroger CI (Cocobbon Ertal) american of the Controlland Postlinian extraction of the Controlland Controlland Companies of the Application of the Ap

Sequence 1502 BP; 600 A; 155 C; 249 G; 498 T; 0 other;

intoxication with clostridial toxin.

47.4%; Score 649.8; DB 19; Length 1502;

Query Match

ö .061 ACCACTCCACCGAGGACATCTACGCCATCGGTCTGCGTGACCAGCACCAAGGACATCAACG 1120 955 ATTATATGGTTAATATAGATTATTTAAATAGATATATGTATGGGAAGTCAGGAGAATTG 1014 015 TITITAATACACGTAGAAATAATAATGACTICAATGAAGGATATAAAATATAAAAAA 1074 GTATCAGAGGTAACACCAACGACACCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACA 1000 TGACTATCAACAACAAGGCCTACAACCTGTTCATGAAGAACGAGACCATGTACGCCGACA 1060 161 AGRICTOGAGGAGGAGGAGACGTCAGCTGAACCCAATCTTCCCATTGGACTTCAAGCTGG 220 295 AAGTGAGGAGGAGGGGGATGTTCAGCTTAATGTGCCAATATTTCCATTTGAGTTAG 354 GITCCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACCCAGAACGAGAACAICGTCTACA 280 521 TCACCAACAACAIGAIGGGTAACAIGAAGAICTACAICAACGGTAAGCIGAICGACACA 580 655 TIACTABCABATGATGGGGAAATATGAAGATTTATATAATGGAAAATTAATAGATACTA 714 581 TCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCTTCGAGATCAACA 640 TGCAGTACACCAACGTCGTCAAGGACTACTGGGGTAACGACCTGAGATACAACAAGGAGT 820 881 TCTTCAACACCAGACGTAACAACAACGACTTCAACGAGGGTTACAAGATCATCATCAAGGC 940 41 CCAACAACTCCCTGTTGAAGGACATCAACAAGTACTTCAACAACATCAACGACTCCA 100 175 CIAGCATGGCTTTATTAAAAGATATAATTAATGAATATTTCAATAATATTAATGATTCAA 234 235 AAATTTTGAGGCTACAAAACAGAAAAATACTTTAGTGGATACATCAGGATATAATGCAG 294 341 ACTIGGCAGGTIACACCATCATCGACTCCGTCAAGAACAACTCCGGGTGGTCCATCGGTA 400 401 TCATCTCCAACTTCCTGGTCTTCACCCTGAAGCAGAACAGAACTCCGAGCAGTCCATCA 460 461 ACTROTOCTACGACATOTOCAACAACACGOTOCTGGTTACAACAAGTGGTTCTTCGTCACCG 520 595 ATTITAGITATGATATATCAAATMATGCTCCTGGATACMATAAATGGTTTTTTGTAACTG 654 Gaps 281 ACTOCATGTACGAGTOCTTCTCCATCTCCTTCTGGATCAGAATGAAGAAGGGGTCTCCA 715 TARABAGTTARAGARCTARCTGGARTTTARAGARACTATARACATTGGARATARAGA 641 AGATOCCAGACACOGGTCTGATCACCTCCGACTCCGACAACATCAACATGTGGATCCGTG 835 ATTITITATATATAGCIAAAGAATAGAGGIAAAGATAAATAAATAAATAGCT 101 AGATCCTGTCCTGCAGAACCGTAAGAACACCTTGGTCGACACCTCCGGTTACAACGCCG 701 ACTIVIACATOTICGCCAAGGAGTIGGACGGTAAGGACATCAACATCCIGITCAACTCCT 535 TEMPERGERATIFIED GRAFFITTROFFINA DACADA TORAGA GATAGA GATAGA GATAGA GATAGA A TAN ö Indels Pred. No. 5.2e-132; !: Mismatches 422; 8 68.24; Conservative Sest Local Similarity Matches 903: Conserv 221 761 941 (1001 à g ð 용 à 8 8 à e à 8 à 8 ò 8 à 8 용 ð 용 g à ò 8 용 ò

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DB 21;

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Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Botulinum neurotoxin type D; BoNT; botulism; non-toxic; vaccine; polson;
                                                                           1180
                                                                                                                                                                                                                           1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTATGCTTCATTATTAGAATCAACACCATTGGGGGTTTTGTACCTGTAAGTGAAT 1494
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type D, useful in vectories for protection against botulism, comprises
at least one mino acid mutation not present in the wild type D
       1195 ATCATAGTACTGANGATATATATGCTATAGGTTTAAGAGAACAAACAAGGATATAAATG 1254
                                                                                   1121 ACAACATCATCTTCCAGATCGAGCAAJGAACAACACTTACTACTACGCTTCGCAGATGT
                                                                                                                         1255 ATAATATTATATTCAAATACAACCAATGAATAATACTTATTATTAGGCATCTCAAATAT
                                                                                                                                                                                                                    TCAAGTCCAACTTCAACGGTGAGAACATCTCCGGTATCTGTTCCATCGGTACCTACAGAT
                                                                                                                                                                                                                                                          1315 TTAAATCAAATTTTAATGGAGAAATATTTCTGGAAATATGTTCAATAGGTBCTTATCGTT
                                                                                                                                                                                                                                                                                                                                                                    1241 TCCGTCTGGGTGGTGACTGGTACAGACAACTACTTGGTTCCAACTGTCAAGCAGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                          TIRGECTICGEGGTGATIGGTATAGECACATTATTIGGTGCCTACTGTGAAGCAAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTACGCCTCCTTGCTGGAGTCCACTTCCACCCACTGGGGATTCGTCGCGGGTCTCCGAGT
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997 GACATGACTATCAACAAGGCCTACAAGCTGTTCATGAAGAACGAGGCGTGTACGCC 1056 .057 GACAACCACTCCACGGGGGGGACATCTACGCCATCGGTCTGCGTGACCAGACCAAGGACATC 1116 117 AACSACAACATCATCTTCCAGATCCAGCAATGAACAACACTTACTACTACTACGCTTCCCAG 1176 955 CGTMANIANGGATCATTCATTCAACCATGTAATACGTTCGATTACTACGCGAGCCAA 1014 954 AAGCGIATCAGAGGIAACACCAACGACACCAGAGTCAGAGGIGGIGACATCCTGTACTTC 996 895 423 969 184 AATAAAATCCCGAACACACACATTAATAACGTCTGATTCTGACAACAACAATATGTGGATT 543 756 603 TCCTTGCAGTACACCAACGTCGTCAAGGACTACTGGGGTAACGACCTGAGATACAACAAG 816 663 817 GAGTACTACATGGTCAACATCGACTACTTGAACAGATACATGTACGCCAACTCCAGACAG 876 977 ATCCTCTTCAACACCAGACGTAACAACAACGACTTCAACGAGGGTTACAAGATCATCATC 936 157 OCCGAGGICICCGAGGAGGIGACGICCAGCIGAACCCAAICTICCCAIICGACIICAAG 216 CTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACCCAGAACGAGAACATCGTC 276 64 TIGGGIRGCICIGGIGATGACCCTGGCAAAATTATIGTAACTCAAAACGAAAATATIGTT 123 TCCAACTIGCCAGGIIACACCAICATCGACICCGICAAGAACAACICCGGIIGGICCAIC 396 GGTATCATCTCCAACTTCCTGGTCTTCACCCTGAAGCAGAACGAGGACTCCGAGCAGTCC 456 517 ACCGTCACCACACATGATGGGTAACATGAAGATCTACATCAAGGGTAAGCTGATCGAC 576 577 ACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCTTCGAGATC 636 Gaps 4 GCAGAAGTTAGAGTTGAGGGAAACGTGCAGTTGAATCCTATCTTTCCATTTGACTTTAAG 63 697 CGYGACTTCTACATCTTCGCCAAGGAGTTGGACGTAAGGACATCAACATCCTGTTCAAC 544 AGAGATTTCTATATTTTCGCAAAAGAATTAGATGACAAGGACATTAATATCGTTTGAAT 604 TCACTTCAGTACACTAATGTTGTTAAGGATTATTGGGGTAATGATTTAAGATATGATAAG 784 AAAGAATCCGTGGAAATACAATGATACTAGAGTTCGTGGTGAGAACGTGCTATATTTT 344 AATACAACGATAGATAATAAGCAGTACTCTTTAGGCATGTATAAACCGTCAA-----244 GGCATARITAGCAATTITCTAGTITTTACACTAAAGCAAAATAGCAAGCAGGAC TACAACTOCATGTAGGAGTCCTTCTCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTC 184 TCAAATTTACCAGGTFAFACCATCATCGACAGCGTAAAAAAAATTGAGGTGGTCTATT 457 ATCAACTTCTCCTACGACATCTCCCAACAACGCTCCTGGTTACAACAAGTGGTTCTTCGTC 637 AACAAGATCCCAGACACCGGTCTGATCACCTCCGACACCACAACATCAACATCTCGATC 12; 401; Indels 105; Score 526.4; DE Pred. No. 3.7e-3 0; Mismatches 4 38.4%; Conservative a à a

1177 ATCTTCAAGTGCAACTTCAACGGTGAGAACATCTCCGGTATCTGTTCCATCGGTACCTAC 1236

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Seguence 1208 BP; 416 A; 203 C; 216 G; 373 T; 0 other

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                                                                                            217 CTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACCCAGAACGAGAACATCGTC
                                                                                                                                                                               118 TIGGGIAGCICIGGIGAIGACCGIGGCAAATIATIGIAACTCAAAACGAAAATATIGIT
                                                                                                                                                                                                                                                                  277 TACAACTCCATGTACGAGTCCTTCTCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTC
                                                                                                                                                                                                                                                                                                                178 TATAAIGCTAIGLAITCATTCICTATTAGCTICIGGAICAGAAITAATAAAGGGIT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               238 TCAAATTTACCAGGTTATACCATCATCGACAGGTTAAAAATAATTCAGGATGGTCTATT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sotulinum neurotoxin type D; BoNT; botulism; non-toxic; vaccine; poison;
1015 TTATITCTTTCTAGCAACGACCAATCGTTTAGGAATACTATCAGTGGCTCAATCTATTT
                                                                                                                       1237 AGATTCCGTCTGGGTGGTG---ACTGGTACAGACACTACTTGGTTCCAACTGTCAAG 1293
                                                                                                                                                                               .075 TCTTTTAAACTGGTGATGATTACTGGTTTAACCATGAATACTTGATCCCCAGTAATTAAA 1134
                                                                                                                                                                                                                                                                                              1135 ATCGAACATTACGCTTCATTACTGGAATCAACTTCTACACATTGGGTCTTTGTCCCAGGG 1194
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Type D BoNT non-toxic immunogenic derivative nucleotide sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38.4%; Score 526.4; DB 21; Length 1440;
65.9%; Pred. No. 3.8e-105;
.ive 0; Mismatches 401; Indels 12;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 8: Page 59-62; 66pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAZ98631 standard; DNA; 1440 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 Similarity 65.9%;
799; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98ZA-0006538
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1354 TCCGAGTAATAG 1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1195 TCTGAGTAAAG 1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Clostridium botulinum.
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Query Match

Local Best Loca Matches

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               1189 ATCGAACATTACGCTTCATTACTGGAACTACTACTACACATTGGGTCTTTGTCCCAGCG 1248
                                                                                                                                                                                                                                                                                                                                                                                  New nucleic acids encoding the carboxy- or amino-terminal portions of
the heavy chain of botulinum neurotoxin of serotype A-G, useful as
wockine against botulism
                                                                                                                              Botulism toxin heavy chain C-terminal coding sequence (serotype D)
                                                                                                                                            Botulism; toxin; neurotoxin; heavy chain; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium;
                                                                                                                                                                                                                                                                                                                                                Lapenotiere H:
                                                                                                                                                                                                                                                                                                                                  (USSA ) US ARMY NEDICAL RES & MATERIAL COMMAND.
                                                                                                                                                                                                                 /product- H_C peptide fragment
                                                                                                                                                                                                                                                                                                                                                Middlebrook JL,
                                                                                                                                                                                            location/Qualifiers
10..1365
/*tag= a
                                                                                   AAA54487 standard: DNA: 1374 BP
                                                                                                                                                                                                                                                                                                                                                                                                               Claim 2; Fig 6a; 73pp; English.
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99US-0133867.
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99US-0133873.
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                                                                                                                11-APR-2001 (first entry)
                                   1354 TCCGAGTAATAG 1365
                                               1249 TCTGAGTAAAG 1260
                                                                                                                                                                        Synthetic.
Clostridium botulinum.
                                                                                                                                                                                                                                                                                                                                                Smith LA, Byrne MP,
                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-016048/02.
P-PSDB; AAB04093.
                                                                                                                                                                                                                               W0200067700-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304 ATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTGC---CAGGTTACACCATC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 991 ATCHARCTCCATCGAGCAGAACTCCGGTTGGAAGTTGTGTATCCGTAACGGTAACATCGAG 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151 TGGATCTTGCAGGACGTCAACGTAGAGTACAAGTCCTTGATCTTCGACTACTCGGAGTCC 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 AACAACGCTCCTGGTTA---CAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATG 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            538 GGTAACATGAAGATCTACATCAAGGGTAAGCTGATCGACGCCATCAAGGAGTTG 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             598 ACCGGTATICAACTTCTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACCGGT 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           683
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       778 GICAAGGACIACIGGGGIAACGACCIGAGAIACAACAAGGAGIACIACAIGGICAACAIC 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87 ATCARGGACTACTGGGGTAACCCACTGAAGTTCGACAGAGTACTACATCATCAACGAC 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98 AACAACAACGACTICAACGAGGGTTACAAGATCATCAAGCGTATCAGGGTAACACC 957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    907 GACCGTTCCAAGCTGTACACCGGTAACCCTATCAACTCCGTCTCCCACAAGAAC 966
                                                                                                                                                                                                                                                                                                                                                                                                                                64 ATCATCAACGAGTACTTCAACAACATCAACGACTGCAAGATCCTGTGCCTGCAGAACCGT 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124 AAGAACACCTIGGICGACACCICGGIIACAACGCCGAGGICICCGAGGAGGGIGACGIC 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           220 CAGITGAACACCAICTACACCAACGACTICAAGITGICCTCTTCCGGTGA------C 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           244 AAGGTCATCGTCACCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCC 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            271 AAGATCATCGTCAACTTGAACAACAACAACATCTTGTACTCCGCCATCTACGAGAACTCCTCT 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 ATCGACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTTCCTGGTC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 TTCACCCTGAAGCAGAAGGAGTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCC 480
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                                                                                                                                                                                                                                                                                                      4 ITCACGATGACCATCCCAATCAACATCTTCTCCTACACCAACAACTCCCTGTTGAAGGAC 63
                                                                                                                                                                                                                                                                                                                                                                       40 ITCGAGAACACCATGCCATTCAACATCTTCTCCTACAACAACACTCCTTGTTGAAGGAC 99
                                                                                                                                                                                                                                             Gaps
is also high and cost of production is lower. The nucleic acids can be derived from Clostridium botulinum serotypes A-G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           531 GACGAGGTCAAGCTGGACAAGACCATCGTTCGGTATCGACGAGAACATCGA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184 CAGCTGAACCCAATCTTCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGG
                                                                                                                                                                     DB 22; Length 1374;
                                                                                                                                                                                                                                     45;
                                                                                                                                                                     Query Match 30.64; Score 420.2; DB 22; Length Best Local Similarity 63.08; Pred. No. 5.1e-82; Matches 754; Conservative 0; Mismatches 398; Indels
                                                                                                    Sequence 1374 BP; 367 A; 423 C; 274 G; 310 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             598 ATCGACTTCAAG------CIGATCAACTGTACCGACACCACC 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  534 AAGTICSTCIGGAICAAGGACTICAACATCITCGGICGIGAGCIGAACGCCACCGAGGIC 693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            742 AACATOCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTGGGGTAACGAC 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43 AACAACTCCCTGTTGAAGGACATCATGAAGAGTACTTCAACAACATCAACGACTCCAAG 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        163 GTCTCCGAGGAGGGTGACGTCCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGGGT 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         84 AACTCC----GAGAACTCCAACATCACCGCCCACCAGTCCAAGTTCGTCGTCTAGGAC 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              238 TCCATGTTCGACAACTTCTCCATCAACTTCTGGGTCCGTACCGAAGTACAACAACAAC 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           298 GACATCCAGACCIACCIGCAGAACGAGTACACCATCATCTCCCTGTATCAAGAACGACTCC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              385 GGITGGIGCATCGGIATCAICICCAACITCCIGGICTTCACCCIGAAGCAGAACGAGGAC 444
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              64 ATCCTGTCCCTGTCCTACCGTGGTGGTCGTCTCTGATCGACTCCTCCGGTTACGGAGCCACC 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 AAGGACACCATCCTGATCCAGGTCTTCAACAACTACATCTCCAACATCTCCTCCAACGC 63
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              223 TCCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACAGAACGAGAACATCGTCTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   283 TCCATGTACGACTCCTTCTCCATCTCTTCTGGATCAGAATCAACAAGTGGGTCTCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        343 -----TIGCCAGGTTACACCATCGACTCGACTCAACACACTCC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.9%; Score 217.4; DB 21; Length 1347;
52.5%; Pred. No. 7.6e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 516; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1347 BP; 358 A; 442 C; 263 G; 284 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 631; Conservative
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[gowrt, heavy chail c'terminal fragment (EC)"
/note- "No stop codon given in the specification"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The inventor relates to novel, vectories that indee a protective immune response against bothlium nearcoxin (BANT) securities A. B. C. D. E. S. B. S. B. G. S. B. S. 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against
              958 AACGACACAGAGTCAGAGGTGGTGACATCCTGTACTTCGACATGACTATCACAACAACAAG
                                                                                 967 CCTTACTCCCGTATCCTGAACGGTGACAAAATCATCTGCACAGGTGCTGTACAACTCCCGT 1026
                                                                                                                                            1018 GCCIACAACCIGITCAIGAAGAACGAGACCAIGIACGCCGACAA-----CCACICCAC 1071
                                                                                                                                                                                         1027 AAGTACATGATCATCGTGACACCGACACCATCTACGCCACCCAGGTGGTGACTGTTCC 1086
                                                                                                                                                                                                                                                                                         1072 GASGACATCTACGCCATCGGTCTGCGTGAGCAGACCAGGACATCAACGACACATCATC 1131
                                                                                                                                                                                                                                                                                                                                                    1087 CAGAACTGTGTGTGTACGCCCTGAAGCTGCAACCTGGGTAACTACGGTATGGGTATC 1146
                                                                                                                                                                                                                                                                                                                                                                                                                              1132 TICCAGATOCAGOCAATGAACAACACITACIACTACGCTICCCAGAICTTCAAGICC 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Botulinum neurotoxin; heavy chain; BoNT; serotype G;
C-Terminal fragment; Venevatelan equine encephilitis virus replicon;
VEEE: botulism; vaccine; diagnosis; drug soreening; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1147 TICTOCATCAGAACATGSTCTCCAAGAACAAGTACTGCTCCCAGAICTTCTCCTCC 1203
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA encoding synthetic BoNT serotype G (BoNTG) Hc fragment
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [USME-] US MEDICAL RES INST INFECTIOUS DISEASES.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1159 TACTACTAGGTTCCCAGATCTTCAAGTCCAACTTCAAGGTGAGAACATCTCGGGFATC 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1114 AAGTACTAGGAGAAGACCACCTACAACTGTCAAATCCTGTGGGAAAAGGACACAAGAC 1173
                                                814 TACTICICOAAGCCICCATGGGTGAGACCCCCTCGTACCAACAACGCCCC 873
                                                                                                                                                                                                                                               934 CGTAACATCAACAACSACAACATCGTCCGTGAGGGTGACTACTACCTGAACATCGAC 993
                   862 GCCAACTCCA---GACAGATCGTCTTCAACACCAGAGGTAACAACAACGACTTCAACGAG 918
                                                                                                           919 GGTTACAAGATCATCATCAAGGGTATCAGAGGTAACACCAAGGACACCAGAGTCAGAGGT 978
                                                                                                                                                       874 ATCANCTACCAGANCCTGTACCTGGGTCTGCGTTTCATCATCAAGAAGGCCTCCAACTCC 933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Botulism toxin heavy chain C-terminal coding sequence (serotype G)
                                                                                                                                                                                                                                                                                                                                      994 AACATCTCCGACGAGTCCTACCGTGTCTACGTCTGGTCAACTCCAAGGAGATCCAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Botulism; toxin; neurotoxin; heavy chain; recombinant expression;
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infection; ds.
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/product= H_C peptide fragment
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Recullent northogones are translated as a single 150 km polymetric chain and then pottermediationally nicked. Journal a dichain constituting of 100 km based, named as 150 km laffer that, which constituting of 100 km based, named as 150 km laffer that, which chain constituting of 100 km based, named based, not be madel, the combinant of the last posterior of the last poste New nucleic acids encoding the carboxy- or amino-terminal portions of the heavy chain of botulinum neurotoxin of serotype A-G, useful as vaccine against botulism claim 2; Fig 10a; 73pp; English.

Query Match 15.9%; Score 217.4; DB 22; Length 1368; Bast Local Similarity 52.5%; Pred. No. 7.166-92; Indela 54; Gaps Matches 51; Conservative 0; Mismatches 516; Indela 54; Gaps

621

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240 CGACATCATCTACAACGGAAGATACCAGAACTTCTCCATCTCCTTCTGGGTCCGTATCCC 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100 AAAGTACTTCAACAAGGTCAACCTGAATAACGAGTACACCATCATCGACGACGACGTCGTAA 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20 CACCCCCCCTAACAATCACAAGTTGGTCTTCAACTACACCCAGATGATCTCCCATCTCCGA 479
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      87 CATCAACGACTCCAAGATCCTGTGCTGCAGAACCGTAAGAACACCTTGGTCGACACCTC 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66 GATCAAGGACAACTCCATCTTGGACATGAGAAAAGAATAAGTTCATCGACATCTC 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       147 CGGTIACAACGCCGAGGTCTCCGACGAGGGTGACGTCCAGCTGAACCCAATCTTCCATT 206
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   186 CCAGTTCGGAATCTACTCCTCC-----AAGCCTTCCGAGGTCAACATCGCTCAGAACAA 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  267 GAACATOGICTACAACTCCATGIACGAGTQCTTCTGCATCTCCTTCTGGATCAGAATCAA 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   327 CAAGTGGGTCTCCAACTT-----GCCAGGTTACACCATCATCGACTCCGTC---AA 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175 GAAGAACTGGGGGTTGGTGCATGGGTATCATCTGCAACTTGCTGGTGTTCAGCGTGAAGGA 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35 GAACGAGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACGCTCCTGG 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27 CATCTTCTCCTACACCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAA 86
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14.68;
99US-0133869.
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                                                                                               Smith LA. Byrne MP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                          WPI; 2001-016048/02.
P-PSDB; AAB04096.
12-MAY-1999;
12-MAY-1999;
29-JUL-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                  1003 AACATCTCCGACGACGACCTCTTACGTCTCGTCGTCAACTCCAAGGACATCCAGGACG 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1099 GAGCAGACCAAGGACATCAACGACAACATCATCTTCCAGATCCAGCCAATGAACACACT 1158
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1159 TACTACTACCCTTCCCAGATCTTCAAGTCCAACTTCAACGGTGAGAACATCTCCGGTATC 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1123 AAGIACINGGAGAAGACCACCINCAACHGICAGAACCIGIGCAGAAGACCAAGACC 1182
                                                                                                                                                  979 GGTGACATOCTGTACTTCGACATGACTATCAACAAGGCCTACAACCTGTTCATGAAG 1038
   682 ATCHACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGTAAGGACATC 741
                    543 AAGTTGGTGGATCAAGGACTTGAAGATCTTGGGTGGTGGTGAGCTGAAGGCGCACGAGGTC 702
                                                                742 NACATECTGTTCAACTCCTTGCAGTACACCAAGTGTCGTCAAGGACTACTGGGGTAAGGAC 801
                                                                                     703 TCCTCCCTGTACTGGATCCAGTGCTCCAGCAACACCCTGAAGGACTTCTGGGGAAACCCA 762
                                                                                                                                                                                           862 GCCAACTCCA--GACAGATCGTCTTCAACACGACGTAACAACGACGTTCAACGAG 918
                                                                                                                                                                                                                                                        919 GGTIACAAGATCATCATCAAGCGIATCAGAGGTAACACCAACGACACCAGAGTCAGAGGT 978
                                                                                                                                                                                                                                                                                       883 ATCAACTACCAGAACTGTACCTGGGTCTGCGTTTCATCATCAAGAAGGCCTCCAACTCC 942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sotulism toxin heavy chain C-terminal coding sequence (serotype F).
                                                                                                                          CISAGATACAACAAGGAGTACTACATGGTCAACATGGACTACTTGAACAGATACATGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Botulism; toxin; neurotoxin; heavy chain; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product- H_C peptide fragment
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99US-0133867.
99US-0133867.
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/*tag= a
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Clostridium botulinum.
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12-MAY-1999;
12-MAY-1999;
12-MAY-1999;
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48; Gaps

Score 199.8; DB 22; Length 1317; Pred. No. 5.1e-34; Indels

0; Mismatches 332;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New nucleic acids encoding the carboxy- or sminorterminal portions of the heavy chain of bottlinus neurotoxin of serotype A-G, useful as vaccine against botulism
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                                                                                                                                                                                                     Lapenotiere H;
USSA ) US ARMY NEDICAL RES & MATERIAL COMMAND.
                                                                                                                                                                                  Middlebrook JL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 2: Fig 9a; 73pp; English.
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a ð a ð 용 8 ä 음 ò 8 č 8 ò /*tag- a /product- *Synthetic botulinum neurotoxin serotype F /product- *Synthetic beavy chain C-terminal fragment (HC)* 949 480 CTRCATCAACAAGTSGATCTTCGTCACCATCACCAATAACCGTTTGGGAAACTTCCAGAAT 539 CIACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACGGGTATCAACTT 611 CTACATCAACGGTAACTTGATCGACGAGAAGTCCATCTCCCAACTTGGGTGACATCCACGT 599 CICCAAGACCAICACCITCGAGAICAACAAGAICCCAGACAGCGGICIGAICACCICCGA 671 CTCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGG 731 647 ----- ACGTCGGGATCCGTTACTTCAAAGTCTTGACACTGACAGTGGGTAA 692 TAAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTG 791 GGGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAG 851 GGGTAACTACCTGCTGTACAACAAACGTTACTACTTGCTGAACTTGTTGCGTACCGACAA 812 Botulinum neurotoxin, heavy chain, BoNT; serotype F; C-Cerminal Iragment, Venezuelan equine encephalitis virus replicon; VBE; botulian, vaccine, diagnosis; drug screening; ds. CICCGACAACATTTGITCAAGATCGICGGITGIAACGACACCGGIT------DNA encoding synthetic BoNT serotype F (BoNTF) Hc fragment. 852 ATACATGTAGGCCAACTGCAGACAGATGGTCTTGAAC 888 813 GICCAICAGCCCAGAGICCCAACTICTIGAACAICAAC 849 Location/Qualifiers 10..1308 AA287216 standard; DNA; 1317 BP 99WO-US15570. 98US-0092416. 08-MAY-2000 (first entry) Clostridium botulinum. Synthetic. W0200002524-A2. 09-JUL-1999; 12-MAY-1999; .0-JUL-1998; 20-JAN-2000 AA287216; Tooling the management of the control of the contro 572 윱 à 8 ò 8

The invention praises to prove votices that induce a provincently is minuse response assists beliginary votices that induces a provincently is surply as A. D. C. D. B. If and (perthy Party). The votices of the invention of provincent and industry that and industry that the provincent of the invention of the vector is extroper of the preferred mental heavy dailed frequent (Re) from Section 1 believed to the vector is extracted mental and the vector in the vector is extracted. Figure 1 believed to the vector is extracted and the vector in the vector in the vector is extracted and the vector in the vector in the vector is extracted and vector in the vector in the vector in the vector is extracted and vector in the vector in the vector in the vector is extracted and vector in the vector in the vector in the vector is the vector of concess these produces and contains formation. Aim is a vector of concess these produces and contains formation. Which is only a vector in the ŝ Query Match 14.5%; Score 198.2; DB 21; Length 1317; B8st Lond Smilarity 56.6%; Pred. No. 1.1.e-3. 33 Conservative 0; Mismatches 33; Indels 48; Gaps Matches 496; Conservative 0; Mismatches 33; Indels 48; Gaps 87 CATCAACGACTCCAAGATCCTGTCCTGCAGAACCGTAAGAACACCTTGGTCGACACCTC 146 66 GATCAAGGACAACTCCATCTTGGACATGAGATACGAAAACAATAAGTTCATCGACATCTC 125 6 CACGATGTCCTACACCAACGACAAGATCCTGATCTTGTACTTCAACAAGCTGTACAAGAA 65 27 CATCTCTCCTACACCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAA 86 Sequence 1317 BP: 397 A: 375 C: 239 G: 305 T: 1 other;

126 CGGTTACGATCCAACATCTCCATCAACGGTGACGTCTACATCTACTCCACCAATAGAAA 185 186 CCAGTTCGGAATCTACTCCTCC----AAGCCTTCCGAGGTCAACATCGCTCAGAACAA 239 360 CANTACTCCGGATGGAAGATCTCCCTGAACTACAAGAAGATCATCTGGAGCCTGGAGGA 419 420 CACCGCCGGTAACAATCAGAAGTTGGTCTTCAACTACACACAGATGATCTCCATCTCCGA 479 180 CTACATCAACAAGTGGAACTCGCTCACCATCACCAATAACCGTTTGGGAAACTCCAGAAT 539 540 CTACATCAACGATAACTTGATCGACGAGAAGTCCATCCCAACTTGGGTGACATCCACGT 599 147 CGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCCAGCTGAACCCAATCTTCCCATT 206 207 CGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACGCAGAACGA 266 267 GAACATOGTCTACAACTCCATGTACGAGTCCTTCTCCCTTCTCGGATCAGAATCAA 326 240 CGACATCATCTACAACGGAAGATACCAGAACTTCTCCATGTCCTTCTGGGTCCGTATCCC 299 327 CAAGTGGGTCTCCAACTT-----GCCAGGTTACACCATCATCGACTCCGTC---AA 374 (15 GAACAACTCCGGTTGGTCCATCGGTATCATCTCCCAACTTCCTGGTCTTCACCCTGAAGCA 434 135 GAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTAC---GACATCTCCAACAACGCTCC 491 52 CTACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTT 611 512 CTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGGTCTGATCACCTCCGA 671 192 TOSTINCAACAASTGSTICTICGTCACCGTCACCAACAACATGAIGGSIAACAIGAAGAI a ö a õ a ö

00 CTCCGACACATTTTGTTCAGATCGTCGGTTGTAACGACACCCGTT------ 646

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Novel Botulinum neurotoxin vaccine comprising a fragment from botulinum toxin serotypes A-G, is used for inducing an immune response against

Disclosure; Page 45-46; 54pp; English.

botulinum

Smith L;

Dertzbaugh MT,

Smith JF, Parker M,

P-PSDB; AAY77138. Lee JS, Pushko P,

(USME-) US MEDICAL RES INST INFECTIOUS DISEASES.

572 CICCGACAACAICAACAIGIGGAICCGIGACTICIACAICIICGGCAAGGAGTIGGACGG 731

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80 TCCTGAACCTGCGCTACGAATCCAATCACCTGATCGACCTGTCTCGCTACGCTTCCAAAA 139
                                                                                                                                                                                                                                                                                                     164 TCTCCGAGGAGGGTGACGTCCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGGGTT 223
                                                                                                                                                                                                                                                                                                                                                          140 TCAACATCGGTTCTAAAGTTAACTTCGATCCGATCGACAAGAATCAGATCAGATCAGCTG---- 195
                                                                                                                                                                                                                                                                                                                                                                                                          224 CCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACCAGAACGAGAACATCGTCTACAACT 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           155 CCATCAACTICICCTACGACATCTCCAACAACACCGCTCCTGGTTACAACAA---GTGGTTCT 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           134 GTGTTGTATTGAAATAGTCTCAGATGATCATCTCTGTGACTAGATGGTGGATCT 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           572 TCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCTTCG 631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           554 TOGACCAGAAACCGATCTCCAATCTGGGTAACATCCAGGCTTCTAATAACATCATGTTCA 613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                532 AGANÇAACAAGANCCCAGACACOGGTCTGATCACCTCCGACTCCGACAACATCAACATGT 691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                514 AACTGGACGGTTGTCGTGACACACTC -------ACCGCTACATCT 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                592 GGATCCGTGACTTCTACATCTTCGCCAACGAGTGGACGCTAAGGACATCAACATCCTGT 751
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                                                                                                44 ACAACTCCCTGTTGAAGGACATCAACGAGTACTTCAACAACATCAAGGACTCCAAGA 103
                                                                                                                                                                                                     104 TCCTGTCCCTGCAGAACCGTAAGAACACCTTGGTCGACACCTCCGGTTACAACGCCGAGG 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           254 CTATGTAGGAAAACTTGTCCACCTGCTTGTGGATCCGTATCCGGAATAGTTCAACTGCA 313
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                                                     0; Mismatches 339; Indels 42; Gaps
                                                                                                                                                     20 ACATGGCTCGTCTGCTGTCTACCTTCACTGAATACATCAAGAACATCATCAATACCTCCA 79
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          196 -- TICAAICIGGAAICIICCAAAAICGAAGITAICCIGAAGAAIGCIAICGIAIACAACI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     284 CCATGTACGAGTCCTTCTCCATCTCTGGATCAGAATCAACAAGTGGGTCTCCAACT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 169.6: DB 19; Length 1351;
Pred. No. 2e-27;
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12.48;
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                                Best Local Similarity 54.49
Matches 455; Conservative
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          Query Match
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                                                                                                          732 TAAGGACATCAACATCCIGTTCAACTCCTIGCAGTACACCAACGTCGTCAAGGACTACTG 791
                                                                                                                                                                          792 GGGTAAGGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAG 851
                                                                                                                                                                                                                          53 GGGTAACTACCTGCTGTACAAAAAGGTTACTACTTGCTGAAGCTGTTGCGTACCGACAA 812
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antitoxin; vaccine; neurotoxin; toxin A; intoxication; immunogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Clostridium botulinum toxin A fragment C gene in p6HisBotA(syn).
                                                                                                                                                                                                                                                                                852 ATACAIGTACGCCAACTCCAGACAGATCGTCTTCAAC 888
                                                                                                                                                                                                                                                                                                                     813 GTOCATCACCCAGAACTCCAACTTCTTGAACATCAAC 849
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAV30576 standard; DNA; 1351 BP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
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Botulism; toxin; neurotoxin; heavy chain; recombinant expression; recombinant vector; antigen; immune response; vaccine; bacterium;

Sequence 1351 BP; 407 A; 348 C; 247 G; 349 T; 0 other;

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Moviliam exactorists are trespited as a single 10th polygettide obline and the positronial schools, not seen positronial schools, not seen positronial schools, not seen positronial schools, not seen control control
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nucleic acids encoding the carboxy- or amino-terminal portions of
heavy chain of botulinum neurotoxin of serotype A-G, useful as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12.4%; Score 169.4; DB 22; Length 1323; S4.7%; Pred. No. 22-8-27; Tridels 42; Gaps rative 0; Mismatches 31; Indels 42; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 57 GAAGGACAICAICAACGAGIACIICAACAACAICAACGACICCAAGAICCIGICCCIGCA 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1323 BP; 404 A; 334 C; 242 G; 343 T; 8 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Smith LA. Byrne MP. Middlebrook JL. Lapenotiere H:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (USSA ) US ARMY MEDICAL RES & MATERIAL COMMAND.
                                                                                                                                                                        /*tag- a
/product- H_C peptide fragment
                                                                                                                  Location/Qualifiers
13..1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Fig 2a; 73pp; English.
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990S-0133867.
990S-0133867.
990S-0133869.
990S-0133873.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               vaccine against botulism
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                                                                            Clostridium botulinum.
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infection; ds
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12-MAY-1999;
29-JUL-1999;
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12-MAY-1999;
12-MAY-1999;
12-MAY-1999;
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                                                Synthetic
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186 AICITOCAAATCGAAGATTGCTGAAGAATGCTATCGTATACAACTCTATGTACGAAAA 245
                                                       297 CTTCTCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCCAACTTGCC----- 347
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                                                                                                                                                   108 CAACTICCIGGICTICACCCIGAAGCAGAGGAGACTCCGAGCAGTCCATCAACTTCIC 467
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Toxin; neurotoxin; fusion protein; antitoxin; vaccine; immunogen;
Clostridium botulinum; polyhistidine; vector; pETHisa; pHisBot; ds.
                                                                                           246 CTTCTCCCACCTCTTCTGGATCCGTATCCCGAAATACTTCAACTCCATCTCTGAACAA
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/product- pHisBot fusion protein
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940S-0329154.
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16-MAR-1995;
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                          -ACCGCTACA 597
                                                                                                                    689 TGFGGATCCGFGACTTCTACATCTTCGCCAAGGAGTTGGACGGTAAGGACATCAACATCC 748
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and other adimals at risk of intoxication with clostridial toxin
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662 TCAAACTGGACGGTTGTCGTGACACTC----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 AGATOCTGTCCCTGCAGAACCGTAAGAACACCTTGGTCGACACCTCGGGTTACAACGCCG 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              161 AGGTCTCCGAGGAGGGTGACGTCAGCTGAACCCAATCTTCCATTCGACTTCAAGCTGG 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221 GITCCICCGGIGAGGACAGAGGIAAGGICATCGICACCCAGAACGAGAACAICGICTACA 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281 ACTCCATGTACGAGTCCTTCTCCATCTCTTGTGAATCAGAATCAACAAGTGGGTCTCCA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATCICICICAACAAIGAAIACACCAICCAICAACIGCAIGGAAAACAAIICIGGIIGGA 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGRICCATCAACTTCTCCTACGACATCTCCAACAACGCTCCTGGTTACAACAA----GTGGT 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182 AGCGTGTTGTATTCAAATACTCTCAGATGATCAACATCTGTGACTACATCAATCGCTGGA 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              509 TOTTOGICACGICACCAACAIGAIGGGIAACAIGAAAAIGAAAAICAACAICAAAAGAIAAGC 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54.2 TOTTOGITACCATCACCAACAATGGTCTGAATAACTCCAAAATGTACATCAAGGGCGGTC 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCT 628
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188 AAATCAACATCGGTTCTAAAGTTAACTTCGATCCGATCGACAAGAATCAGATCCAGCTG- 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       247 -----TICAATCIGGAATCITCCAAAATCGAAGTIATCCIGAAGAAIGCIATGGTATACA 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 341 ACTTGCC-----AGGTTACACCATCATGACTCCGTCAAGAACAACTCGGGTTGGT 391
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                                                                                                                                                                                                                                                                                                                                                                                                          Parison procedure comprising non-toxus protein and part of toxin - 
configuration for matti-toxins against Clostridium how h, and 
c. difficile type toxins, and to treat C. difficile intoxication, 
partic. diarrhoea
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54.4%; Pred. No. 2.2e-27;
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                                                                                                                                                                 Padhye NV, Stafford DC,
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                                                                                (OPHI-) OPHIDIAN PHARM INC.
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Matches 456; Conservative
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14 - APR - 1995;
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÷ 221 STICCTCCGTGAGGACAGAGGTAAGGTCATCGTCAGCGAGAACGAGAACATCGTCTACA 280 569 TGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCT 628 TGATCGACCAGAAACGGATCTCCCAATCTGGGTAACATCCACGCTTCTAATAACATCATGT 661 662 TCAAACTGGACGGTTGTCGTGACACTC-----ACCGCTACA 697 TGTGGNTCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGCTAAGGACATCAACATCC 748 698 TCTGGATCAAATACTTCAATCTGTTCGACAAGAACTGAACGAAAAAGAAATCAAAGACC 757 749 TGTTCAACTCCTTGCAGTACACCAAGGTGGTCAAGGACTACTGGGGTAACGACCTGAGAT 808 41 CCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAACATCAACGACTCCA 100 68 CTAGCATGGCTCGTCTGCTCTACCTTCACTGAATACATCAACATCAATACCT 127 101 AGATECTGFCCCTGCAGACCGTAAGACACCTFGGTCGACACCFCCGGTTACAACGCCG 160 128 CCATCCTGAACCTGCGCTACGAATCCAACTGATCGACTGTCTGACCTGCTCGCTTCCA 187 161 AGGICTCCGAGGAGGGTGACGTCCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGG 220 247 -----TTCAATCTGGAATCTTCCAAAATCGAAGTTATCCTGAAGATGCTATCGTATACA 301 341 ACTTGCC------AGGTTACACCATCATCGACTCCGTCAAGAACAACTCCGGGTTGGT 391 362 CCRICICITCHGAACAATGAATACACCATCAACTGCATGGAAAACAATTCTGGTTGGA 421 392 OCATCOGTATCATCTCCAACTTCCTGGTCTTCACCTGAAGCAGAAGGAGGACTCCGAGC 451 422 AAGTATCTCTGAACTACGGTGAATCATCTGGACTCTGCAGGACACTCAGGAAATCAAAC 481 452 AGTCCATCAACTTCTCCTAGGACATCTCCAACAAGGCTCCTGGTTACAACAA---GTGGT 508 509 TCTTCGTCACCGTCACCAACAAGATGGGTAACATGAAGATGTACAACATCTACACGGTAAGC 568 629 TCGAGATCAACAAGATCCCAGACACGGGTCTGATCACCTCCGACTCCGACAACATCAACA 688 42; Gaps 809 ACAACAAGGAGTACTACATGGTCAACATGGACTAGAACAGATACATGTACGCCAAC 867 188 ANATOMICATOGETICTANACTINACTICGATCCGATCGACAAGAATCAGATCCAGCTG-Query Match 12.4%; Score 169.4; DB 19; Length 1402; Best Local Similarity 24.4; Prect, No. 2.2e.27; Matches 455; Conservative 6; Mismatches 41; Indels 42; 602 689 a à g õ g €obied from 109 101 86 for 05 205 2004 ŏ

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GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compuyen Ltd DR nucleic - nucleic search, using sw model	7, 2002, 12:20:20; Search time 57 Seconds (without alignments) 7376:383 Million cell upd	US-09-910-186A-9 1371 1 gaattoacgatgaccatccctctccgagtaataggaattc 1373	IDENTITY_NUC Gapop 10:0 , Gapext 1.0	441362 segs, 153338381 residues	Octal number of hits satisfying chosen parameters:		Winimum Match 0% Waximum Match 100% Listing first 45 summaries	Issued_Batente_NR:* 1. Organ_Sylopidata/Itlan/Sk_COMB.seq:* 1. Organ_Sylopidata/Itlan/Sk_COMB.seq:* 1. Organ_Sylopidata/Itlan/Sk_COMB.seq:* 1. Organ_Sylopidata/Itlan/Sk_COMB.seq:* 2. Organ_Sylopidata/Itlan/Sk_COMB.seq:* 2. Organ_Sylopidata/Itlan/Sk_COMB.seq:* 6. Organ_Sylopidata/Itlan/Sk_COMB.seq:* 6. Organ_Sylopidata/Itlan/Sk_COMB.seq:*	Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and its desired by analysis of the cotal score distribution.	SUMMARIES	ID	US-08-480-604A-25 US-08-495-496A-25 US-08-915-136-25 US-08-480-604A-22 US-08-405-496A-22	US-08-915-136-22 US-08-700-651-1 US-08-928-361B-4	US-08-928-3618-3 US-08-928-3618-2 US-08-928-3618-1	US-08-961-527-363 US-08-471-033-18 US-08-471-044-18 US-08-463-483A-18	US-08-471-046A-18 US-08-470-566B-18 US-08-469-334-18	US-09-300-529-18 US-08-471-033-35 US-08-471-044-35	US-08-463-483A-35 US-08-471-046A-35 US-08-470-5688-35 US-08-469-334-35 US-09-300-529-35
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422 AAGTATCTCTGAACTAGGTGAAATCATCTGGACTCTGGAGGAAATCAAAC 481
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161 AGSTCTCCCAGGAGGGTGAGGTCCAGCTGAAGCCAATGTTCCCATTGGAGTTCAAGCTGG 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       188 AAATCAACATCGGTTCTAAAGTTAACTTCGATCCGATCGACAAGAATCAGATCCAGCTG- 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221 GITCCICCGGICAGGACAGAGGIAAGGICATCGICACCCAGAACGAGGAACAICGICTACA 280
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  362 CCATCTCTCTGAACAATGAATACACCATCAACAACAATGCAAAACAATTCTGGTTGGA 421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 169.4; DB 1; Length 1402;
Pred. No. 8e-29;
0; Mismatches 341; Indels 42; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128 CCATCCTGAACCTGCGCTACGAATCCAATCACTGATCGACTGTCTCGCTAGGCTTCCA
REFERENCE COOKER WINDER, OPHD-01763
TELECOMONICATION LIVERARION:
TELERAK (1415) 977-838
INFORMATION FOR SEQ 10 NO: 2820HGC SHOWN FOR
                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLEGULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Natch
Best Local Similarity 54.4%;
Matches 456; Conservative (
                                                                                                                                                                                                                                                                nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: CDS
LOCATION: 1..1386
                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-480-604A-25
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809 ACAACAAGGAGTACTACATGGTCAACATGGACTACTIGAACAGATACATGTACGCGAAC 867

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41 CCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAACATCAACGACTCCA 100
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101 AGAICCTGTCCTGCAGAACCGTAAGAACACCTTGGTCGACACCTCCGGTTACAACGCCG 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              161 AGGICTCCGAGGAGGTGACGTCCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGG 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12.4%; Score 169.4; DB 2; Length 1402; 54.4%; Pred. No. 8e-29;
                                                            Sequence 73, Agriculton Up/Se461546A
GENERAL HORSMANDIN.
THE OF PRESENT HILLINGS WIGHTS
THIRD OF PRESENT HILLINGS WOODEN COORTICUM SOUTHWAY
THIRD OF PRESENTS.
THIRD OF THIRD OF THIRD THIRD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPHD-01308
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SOTHWRE PATENTAL ...
SOTHWER APILATION DAY
APPLICATION NUMBER: US/08/405,496A
FILING DATE: 16-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FLING DATE: 04-DEC-1992
PRIOR PELICATION DATA:
APPLICATION NATA:
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FILING DATE: 25-0CT-1994
PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: INGOLIA, DIANE E. REGISTRATION NUMBER: 40,027
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TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 02-DEC-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 07
FILING DATE: 31-OCT-1989
ATTORNEY/AGENT INFORMATION:
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Matches 456; Conservative
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STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
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LOCATION: 1..1386
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RESULT 2
US-08-405-496A-25
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41 CCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAACATCAAGGACTCCA 100
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 AGGTCTCCGAGGAGGGTGACGTCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGG 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 221 GIICCICCGCGGGGGGGGGGGGAAGGICAIGCGCGAGAACGAGAACAIGGICIACA 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122 AAGTATCTCTGAACTACGTGAAATCATCTGGACTCTGCAGGACACTCAAAC 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             68 CTAGGATGGCTCGTCTGTCTACCTTCACTGAATACATCAAGAACATCATCAATACCT 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88 AAATCAACATCGGTTCTAAAGTTAACTTCGATCGATCGACAAGAATCAGATCGAGTCGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          247 ----TICAATCIGGAATCITCCAAAATCGAAGTTATCCIGAAGAATGCTATACA 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281 ACTCCATGTACGAGTCCTTCTCCATCTCTTGGATCAGAATCAACAAGTGGGTCTCCA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41 ACTTGCC-----AGGTTACACCATCATCGACTCGGTCAAGAACAACTCCGGTTGGT 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   392 CCATCGGTATCATCTCCAACTTCCTGGTCTTCACCCTGAAGCAGAACGAGGACTCCGAGC 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.4%; Score 169.4; DB 4; Length 1402;
54.4%; Pred. No. Be-29;
ive 0; Mismatches 341; Indels 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRICING NOTION FOR THE US 08/16.1907
FILING DATE: 02-00C-1993
PRICON PPLICORTING NOTR: 08/1/985.321
PRICON SPELICATION NOTION: 08/1/985.321
PRICON SPELICATION NOTION: 04/1/992
APPLICATION NOTION: 04/1/992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPHD-01763
                                                                                                                                                                                                                                               FILING DATE: 16-PAR-1995
PRIOR APPLICATION NUMBER: US 08/100 '".
FILING DATE: 16-PAR-1995
PRIOR CATION NUMBER: US 08/100 '".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 07/429,791
FILING DATE: 31-0CT-1989
ATTORNEY/AGENT INFORMATION:
                                          US/08/915,136
                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/480,604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40,027
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TELEPRONE: (415,705-8410
TELEPAX: (415,397-8338
INFORMATION FOR SEQ ID NO: 25:
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                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 25-0CT-1994
PRIOR APPLICATION DATA:
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LENGTH: 1402 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: INGOLIA, DIANE E. RECISTRATION NUMBER: 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 456; Conservative
       CURRENT APPLICATION DATA:
                                                                                                                                                                                                     FILING DATE:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid
                                   APPLICATION NUMBER:
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221 GITCCTCCCGTGAGGACAGAGGTAAGGTCATCGTCACCCAGAACGAGAACATCGTCTACA 280
                                                                                                                                             281 ACTOCATGIACGAGTOCTICITCCATCITCITGGAICAGAATCAACAAGIGGGICICCCA 340
                                                                                                                                                                                                                                                                            302 ACTOMAGEACEACACACTCTCTCCCTCTTCTGCATCCCTATCCCGAAATACTTCAACT
                                                                                                                                                                                                                                                                                                                                                                341 ACTTGCC------AGGTTACACCATCATCGACTCCGTCAAGACAACTCCGGTTGGT 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      992 CCATCGGTATCATCTCCAACTTCCTGGTCTTCACCCTGAAGCAGAACGAGTCCGAGC 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   422 AAGTATCTCTGAACTACGGTGAAATCATCTGGACTCTGCGGCACTCAGGAAATCAAAC 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     152 AGTOCATCAACTTCTCCTACGACATCTCCAACAACGCTCCTGGTTACAACAA---GTGGT 508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182 ACCCTCTTGTATTCAAATACTCTCAGATGATCAACATCTCTGACTACATCGCTGGA 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     509 TCTTCGTCACCGTCACCAACAAGATGGGTAACATGAAGATGTACATCAACGGTAAGC 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        542 TCTTGGTTACCATCACCACACATCGTCTGAATACTCCAAAATCTACATCGACGCCGTC 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    569 TGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCT 628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       602 TGATCGACCAGAACCGATCTCCAATCTGGGTAACATCCACGCTTCTAATAACATCATCT 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOGAGATCAACAAGATCCCAGACACOGGTCTGATCACCTCCGACTCCGACAACATCAACA 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  562 TCANACTGGACGGTTGTCGTGACACTC -----ACCGCTACA 697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  589 TGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGTAAGGACATCAACATCC 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     749 TGTTChactCCTTGCAGTACACCAGGTCGAGGACTACTGGGGTAACGACCTGAGAT 808
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                309 ACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGATACATGTACGCCAAC 867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: "HALLEY." HENCE S.
APPLICANT: TERCO, JOSEPH R.
APPLICANT: TERCO, JOSEPH R.
APPLICANT: TERCO, JOSEPH R.
APPLICANT: TERCO, TOSEPH R.
APPLICANT: TERCO, TOSEPH R.
APPLICANT: TITLE OF INVESTICAN VOCINE AND APPLICANT FOR TEACHER TAND
TITLE OF INVESTICAN: PROPERTION: PROPERTION OF C. DITFICLIE DISBASE
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220 MONTGOMERY STREET, SUITE 2200
SAN FRANCISCO
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ZIP: 94104
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABSULT - 08-915-136-25 Squence 25. Application US/08915136 Parent No. 6290900 Parent No. 6290900 Parent No. 6200900 Parent No. 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: KINK, JOHN A.
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MEDIUM TYPE: Floppy
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CORRESPONDENCE ADDRESS
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                                                                 809 ACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGATACATGTACGCCAAC 867
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/480,604A
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220 MONIGOMERY STREET, SUITE 2200
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APPLICATION NUMBER: US 08/422,711
FILING DATE: 14.APP.1995
PRIOR APPLICATION NUMBER: US 08/405,496
APPLICATION NUMBER: US 08/405,496
FILING DATE: 16.9AR.1995
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APPLICATION NUMBER: US 08/329,154
FILING DATE: 25-0CT-1994
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02-DEC-1993
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FILING DATE: 04-DEC-1992
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Pred. No. 1.1e-28;
0; Mismatches 327; Indels
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                                                                              US 07/429,791
PRIOR APPLICATION NAMES: US 07/429, APPLICATION NUMBER: US 07/429, ATTONNEY, ADD OFF-1989 ATTONNEY, AND OFF-1989 ATTONNEY, AND OFF-1989 ATTONNEY, AND OFF-1989 ATTONNEY, AND OFF-1989 ATTONNEY, OFF-1989 AT
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Best Local Similarity 54.89
Matches 447; Conservative
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US-08-480-604A-22
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709 GGTATCCTGAAAGACTTCTGGGGTGACTACCTGCAGTACGACAAACCGTACTACATGCTG 768
772 AACGTCGTCAAGGACTACTGGGGTAACGACCTGAGATACAAGAAGAAGTACTACATGGTC 831
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                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT WILLIAMS, JAMES A.
TITLE OF INVENTION: WACCINE FOR CLOSTRIDIUM BOTULINUM
TITLE OF INVENTION: NUMBOTOXIN
                                                                                                                                                                                                                                                                                                                                                                                          COMPATER SADALES POSICION SADALES POSICIONES IN WELLOW TREAD 1970 (118) COMPATILES IN THE POSICIONE SADALES IN COMPATILES IN SADALES IN CONTRACT Relates 11.0, Version 11.30 SOFTWART PREJICATION DATA. IS/08/105, 496A FILING DATE: 15/48/195
                                                                                    769 ANTOIGHOGATOGGAGAATAGGTTGAGGTCAAC 804
                                                                                                                                                                                                                                                                    CORRESPONDENCES: 30
CORRESPONDENCE ADDRESS:
ADDRESSEE: MEDLEN & CARROLL, LLP
STREET: SAD MONTONERY STREET, SUITE 2200
CITY: SAN FRANCISCO
                                                                832 AACAICGACIACIIGAACAGAIACAIGIACGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPERENCE/DOCKET NUMBER: OPHD-01308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/329,154
FILING DATE: 25-CCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRICR APPLICATION DATA:
APPLICATION NUMBER: 08 07/429,791
FILING DATE: 31-0CT-1889
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/161,907
FILING DATE: 02-DEC-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 07/985,321
                                                                                                                                                        US-08-405-496A-22
; Sequence 22, Application US/08405496A
; Patent No. 5919665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: INGOLIA, DIANE E.
REGISTRATION NUMBER: 40,027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PPLICATION NUMBER: US 07
FILING DATE: 04-DEC-1992
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INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 1330 base pairs
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US-08-405-496A-22
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79 TCCAATCACCTGATCGACCTGTCCGCTTCCAAAATCAACATCGGTTCTAAAGTT 138
                                                                                                                               39 AACTTGGATGGACGACAAGAATGAGATCCAGCTG-----TTGAATCTTCC 192
                                                                                                                                                                                                        244 AAGGTCATGGTCACCGGGAAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCC 303
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24 AAGAAGACCTTGGTGGACACCTCGGGTTACAAGGCGGAGGTCTCGGAGGAGGGTGACGTC 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      592 GAGTTGACCGGTATCAACTTCTCCAAGACCATCACCTTCGAGATCAACAAGAGATCCAGAC 651
                                                                                                    .84 CAGCIGAACCCAATCITCCCATICGACTICAAGCIGGGTICCICCGGIGAGGACAGAGGI
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ADDRESSES:
STREET: 220 MONTONMENT STREET, SUITE 2200
CITY: SAN FRANCISCO
STREET: CALIFORNIA
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Patent No. 6290960
GENERAL INFORMATION:
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APPLICANT: THALLEY, BRUCE S.
APPLICANT: PERCE, JOSEPH R.
APPLICANT: STAFFORD, DOUGLAS C.
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UNITED STATES OF AMERICA

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19 ACCTCACTGAATACATCAAGAACATCATCAATACCTCCAAACCTGCGCTACGTAA 78

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APPLICANTS TREATS ANNOTATION TO CALCIONATE AND SHALL APPLICANTS TREATS AND THE APPLICANTS TREATS AND THE APPLICANTS TREATS AND THE APPLICANTS TREATS AND T 551 ATCACCTCCGACTCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAG 720 Sequence 1, Application US/087006518 Patent No. 6015882 ORGANISM: Cryptosporidium parvum US-08-700-651-1 APPLICANT: PETERSEN, CAROLYN GENERAL INFORMATION: JS-08-700-651-1 Query Match ö 용 č g ô à ., | Description | 12.14, Some 186.8; UB 4; Length 1330; | Description | 12.14, Some 186.8; UB 4; Length 1330; | Description | 12.14, Some 186.8; UB 4; U 193 AAAATCGAAGTIATCCTGAAGAATGCTATGGTATACAACTCTATGTAGGAAACTTCTCC 252 124 AAGAACACTISGICGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGTGACGTC 183 79 TCCAATCACCTGATCGACCTGTCTCGCTACGCTTCCAAAATCAACATCGGTTCTAAAGTT 138 184 CAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGT 243 139 AACTTCGATCGACAAGAATCAGATCGAGCTG-----TTCAATCTGGAATCTTCC 192 244 AAGGICAICGICACCCAGAACGAGAACAICGICIACAACICCAIGIACGAGICCIICICC 303 304 ATCICCTTCIGGATCAGAATCAACAAGIGGGTCTCCAACTIGCC-----AGGTTAC 354 253 ACCICCITCIGGATCCGTAICCCGAAATACTICAACTCCATCTCTGAACAATGAATAC 312 ACCATCATCGACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTTC 414 COMPUTER REAGABLE FORM:
MEDIUM TYPE: Rioppy disk
COMPUTER: 18M FO COMPATIBLE
COMPATIBLE OPHD-01763 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08 07/985,321
FILING DATE: 04-DEC-1992
PRIOR APPLICATION NUMBER: 08 07/429,791
APPLICATION NUMBER: 08 07/429,791
FILING DATE: 31-OCT-1999 US 08/405,496 PRIOR APPLICATION DATA.

PRILOR TON NUMBER: 08 08/329,154

FILING DATE: 25-007-394

FILING DATE: 25-007-394

PRILOR APPLICATION DATE: 08-007-399

PRILOR OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFI PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/480,604 NAME: INSOLIA, DIANE E. RECISTRATION NUMBER: 40,027 REFERENCE/DOCKET NUMBER: OPI TELEFAX: (415) 397-838 INFORMATION FOR SEQ ID NO: 22: SEQUENCE CHARACTERISTICS: MOLECULE TYPE: DNA (genomic) (415) 705-8410 APPLICATION NUMBER: US 08 FILING DATE: 16-MAR-1995 ATTORNEY/AGENT INFORMATION: : 1330 base pairs nucleic acid EDNESS: double PRIOR APPLICATION DATA: 1..1314 CLASSIFICATION: NAME/KEY: CDS PILING DATE: FILING DATE: STRANDEDNESS G-08-915-136-22 LENGTH: Copied from 10910186 on 05 õ 윱 ô g õ đ

541 AACATGAAGATCTACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGACTTGACC 600 601 GGTATCAACTTCTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACCGGTCTG 660 Query Match 9.94; Score 136; DB 3; Length 5163; Best Loal Stailarity 50.64; Pred. No. 2-9e-21. Matches 328; Conservative 0; Mismatches 320; Indels (

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Sequence 1, presidente us/APTOMASIB

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                                                                                                                                                                                                                                                                                                                                                  Score 136, DB 3, Length 5163;
Pred. No. 2.9e-21;
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                                                                                                                                                                                                                                                                                                                                                          9-94; Score 135; DB 3; Length 51 Al Similarity 50:64; Pred. No. 2.9e-21; Indels 328; Conservative 0; Mismatches 320; Indels
                                                                                                                                                                                                                                               DNA (genomic)
INFORMATION FOR SEQ ID NO: 4
SEQUENCE CHARACTERISTICS:
LENGTH: 5163 base pairs
                                                                                                                   nucleic acid
                                                                                                                                                                                                                                                                                                                                                  Ouery Match
Best Local Similarity
                                                                                                                                                                                                              linear
                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                US-08-928-361B-4
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PEPFIDES, GLYCORROTEINS,
FURTHER FUNCTIONAL NUTRINES, VARIANTS, RANLOGS AND FRAGMENTS
FURTHERSON AND DEFECTION/DIAGNOSIS OF CRYPTOSPORIDIUM
SPECIES IMPOSTIONS
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        721 GAGTTGGACGGTAAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTGGTC 780
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ADDRESSEE: PETERS, VERNY, JONES & BIKSA
STREET: 385 Sherman Avenue, Suite 6
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REFERENCE/POCKET NIMBER: 460.76-1(HV)
FELECOMONICATION INFORMATION:
TELEBRATION: 500-324-1678
TELEBRAT: 650-324-1678
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APPLICATION NUMBER: US/08/928,3618
FILING DATE: 12-SEP-1997
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FILING DATE: 13-SEP-1996
ATTORNEY/AGENT INFORMATION:
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OPERATING SYSTEM: PC-DOS/MS-DOS
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Patent No. 6071518
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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TITLE OF INVENTION: THE
TITLE OF INVENTION: FOR
TITLE OF INVENTION: SPE
NUMBER OF SECURANES: 30
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PRIOR APPLICATION DATA:
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Patentin Release #1.0, Version #1.30

COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS

CURRENT APPLICATION DATA:

SOFTWARE:

Floppy disk

MEDIUM TYPE: ð

ZIP: 94306-1840 COMPUTER READABLE FORM:

USA

COUNTRY:

Palo Alto

US/08/928,361E

12-SEP-1997

480.76-1(HV)

TELECOMMUNICATION INFORMATION: TELEPHONE: 650-324-1677 TELEPAX: 650-324-1678

SEQUENCE CHARACTERISTICS: LENGTH: 5318 base pairs

:NFORMATION FOR SEC ID NO: nucleic acid MOLECULE TYPE: DNA (genomic)

STRANDEDNESS:

TOPOLOGY: US-08-928-361B-3

30,518

NAME: Verny, Hana REGISTRATION NUMBER: 30, REFERENCE/DOCKET NUMBER:

APPLICATION NUMBER: US 60/026,062 FILING DATE: 13-SEP-1996 ATTORNEY/AGENT INFORMATION:

PRIOR APPLICATION DATA: APPLICATION NUMBER:

FILING DATE: 13 CLASSIFICATION:

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961 GACACCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAACAAGGCC 1020
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                                                                                                                                                                 9.9%, Score 136, DB 3, Length 5318;
50.6%, Pred. No. 3e-21;
tive 0; Mismatches 320; Indels
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EARLIER APPLICATION NUMBER: 08/415,751
EARLIER FILMS DATE: 1995-04-03
NUMBER OF SEQ ID NOS: 115
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
LENOTH: 5318
                                                                                                                 ORGANISM: Cryptosporidium parvum
                                                                                                                                                                               Best Local Similarity 50.6
Matches 328; Conservative
                                                                                                                               US-08-700-651-2
                                                                                                   TYPE: DNA
                                                                                                                                                                 Query Match
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                                                                                                                541 AACATGAAGATCTACATCAAGGTAAGCTGATGGACACCATCAAGGTCAAGGAGTTGACC 600
                                                                                                                                                                576 AACAACAACAACAACAACTACTACTACTACTACGACAACAACAACAACAACAACAAC
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9.9%; Score 136; DB 3; Length 5318;
50.6%; Pred. No. 3e-21;
                                                     0; Mismatches 320; Indels
                             Sest Local Similarity 50.69
Satches 328; Conservative
     Query Match
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1081 TACGCCATCGGTCTGCGTGAGCAGACCAAGGACATCAACGACAACATCATCTTGCAGATC 1140

THEIR FUNCTIONAL MUTANTS, VARIANTS, ANALOGS AND FRAGMENTS FOR TREATMENT AND DETECTION/DIAGNOSIS OF CRYPTOSPORIDIUM

E: PETERS, VERNY, JONES & BIKSA 385 Sherman Avenue, Suite 6 SPECIES INPECTIONS

30

NUMBER OF SEQUENCES: 3C CORRESPONDENCE ADDRESS: APPLICANT: Perer-APPLICANT: Perer-TITLE OF INVENTION: Petersen, INVENTION: INVENTION: GENERAL INFORMATION: RESULT 10 US-08-928-361B-3

TITLE OF I

ADDRESSEE:

POLYPEPTIDES, GLYCOPROTEINS,

, Carolyn PEPTIDES,

Sequence 3, Application US/08928361B Patent No. 6071518

1177 CAAGAACCAACAACAACTACCACTGCCACAACAACAACTACTTC 1224

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846 GAACAGAIACAIGIACGCCAACTCCAGACAGTCGTCTTCAACACCAGGGTAACAACAA 905
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LENGTH: 7334 base pairs
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STRANDEDNESS: double
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TITLE OF INVENTION: PR
TITLE OF INVENTION: FO
TITLE OF INVENTION: SP
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COMPUTER READABLE FORM:
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                                                                                                                                                                                                                    , Carolyn
PRETIDES, POLYPEPTIDES, GLYCOPROTRINS,
THEIR THOUSTONAL MUTANTS, VARIANTS, ANALOGS AND FRAGMENTS
FOR TREATMENT AND DETECTION/JOANNESIS OF CRYTOSPORIDIDM
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953 CINCINCINCINCANCANCANCANCANGACAACAACAACAACTACTACTACTACTACTACCA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        666 CTCCGACTCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTT 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         726 GGACGGTAAGGACATCAACATCCTGCAACTCCTTGCAGTACACCAACGTCGTCAAGGA 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             786 CTACTGGGGTAACGACCTGAGATACAACGAGTACTACATGGTGACATCGACTACTT 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 8.4%; Score 115.4; DB 3; Length 5511; 
bast Local Similarity 49.0%; Pred No. 1.16-16; 
Matches 321; Indels 0; 
Matches 321; Indels 0;
                                                                               1176 CAAGAAACCAACAACAACTACCACTGCCACAACAACAACTACTACTTC 1223
                                                  1141 CAGCCAATGAACAACACTTACTACTACGCTTCCCAGATCTTCAAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: INN PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                    E: PETERS, VERNY, JONES & BIKSA
385 Sherman Avenue, Suite 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480.76-1(HV)
                                                                                                                                                                                                                                                                                         SPECIES INFECTIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MBER: US/08/928,361B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/026,062
FILLED DATE: 13-SEP-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                              Sequence 2, Application US/08928361B
Patent No. 6071518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Verny, Hana
REGISTRATION NUMBER: 30,518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 48
TELECOMBUNICATION INFORMATION:
TELEPHONE: 650-324-1677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 650-324-1678
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 5511 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 308; Conservative
                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                APPLICANT: Petersen, C
TITLE OF INVENTION: PE
TITLE OF INVENTION: TY
TITLE OF INVENTION: FO
TITLE OF INVENTION: SP
NUMBER OF SEQUENCES: 3P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
FILING DATE: 12-SEP
                                                                                                                                                                                                                                                                                                                                                                           Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                            RY: USA
94306-1840
                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                   US-08-928-361B-2
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                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                               Copied from 10910186 on 05-05-2004
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THEIR FUNCTIONAL MUTANTS, VARIANTS, ANALOGS AND FRACHENTS
FOR TREATMENT AND DETECTION/DIAGNOSIS OF CREPTOSPORIDIUM
SPECIES INFECTIONS
                                                                                                                                                                                                 966 CAGAGTCAGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAACAAGGCCTACAA 1025
                                                                                                                                                                                                                                                                              1026 CCTGTTCATGAAGAACGAGAACAATGTAGGCGAACAACCACTCCACGGAGGACATCTAGGC 1085
                                                                                                                                                                                                                                                                                                                                                                                        1086 CATCGGTCTGCGTGAGCAGGACCATCAACGACAACAACATCATCTTCCAGATCCAGCC 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                             1146 AATGAACAACATTACTACTACGCTTCCCAGATCTTCAAGTCCAAGTTCAACGGGGAGAA 1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1493 CARCARCARCARCARCTRCTACTACTACTACANCCANGRARCCARCARCARCTRCCACTG 1552
                                                    906 OGACTICAACGAGGITACAAGATCATCATCAAGGIATCAAGAGGTAACACCAAGGACAC 965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Carolyn PRFFIDES, GLYCOPROTEINS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/928,351B
FILING DATE: 12-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: PETERS, VERNY, JONES & BIKSA
STREET: 385 Sherman Avenue, Suite 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480.75-1(HV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1206 CATCTCCGGTATCTGTTCCATCGGTACCT 1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1553 CCACAACAACTACTACTTCTGAAACT 1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/026,062
FILING DATE: 13-SEP-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08928361B
Patent No. 6071518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY AGENT INFORMATION:
NAME: Verny, Hann
REGISTRATION NUMBER: 30,518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 48
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-324-1677
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6 Copied From 10910 186

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2352 TCAGCGTCTSAATCGGCATCAACGAGTGCGTCAGCGTCAGCAACTACTAGTAGTACTAGCATCAGCA 2421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2661
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2902 TCTGCATCAACCAGTGCGTCCGCTTCAGCGTCAACCAGTGCGTCGGCTTCAGCGTCGACA 2961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2962 ACTOCITCOSCITCASCATCAACSAGIS-----CGICGGCOICAGCAAGCGCAAGTACC 3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 FILL FILL FOR THE FORM THE FILL FILL FILL FILL FOR THE FORM THE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  89 TCAACGACTCCAAGATCCTGTGCTGCAGAACCGTAAGAACACCTTGGTCGACACCCTCGG 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                149 GTTACAACGCCGAGGTC7CCGAGGGGGGGGTCCAGTCAAACCCAATCTTCCCATTCG 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209 ACTICAAGCIGGGITCCICCGGIGAGGACAGGIAAGGICAICGTCACCCAGAACGAGA 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            269 ACATEGRETACAACTCCATGTACGAGTCCTTCTCCCATCTCCTTCTGGATCAGAATCAACA 328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          329 AGTGGGTCTCCAACTTGCCAGGTTACACCATCATCCACTCCGTCAAGAACAACTCCGGTT 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      446 CCGMSCAGTCCATCCACTTCTCCTACGACATCTCCAACAACGCTCCTGGTTACAACAAGT 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           506 GGTTCTTGGTCACCGTCACCAACAA-----CATGATGGGTAACATGAAGATCTACA 556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      617 AGACCATCACCTTCGAGATCAACAAGATCCCAGACCGGTCTGATCACCTCGGACTCGG 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    677 ACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGTAAGG 736
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29 TCTTCTCCTACACCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAACA 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2602 TCAGCGTCTGAATCAGCATCAACGAGTGCATCAGCTTCAGCATCAACAAGTGCTTCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               389 GGTCCATCGGTAT --- CATCTCCAACTTCCTGGTCTTCACCCTGAAGGAGAACGAGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        557 TCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 4483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6.9%; Score 95; DB 4; Length 4483
44.7%; Pred. No. 3.4e-12;
tive 0; Mismatches 665; Indels
      05/08/961,527
                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: PB340P1
                                                                                                                                                                                                                               NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,373
                                                                                                                                                                                                                                                                                                                                                                                         TELEPAX: (301) 309 8512
INFORMATION FOR SEG ID NO: 363:
SEGURNE CHARACTERISTICS:
LENGTH: 4483 base pairs
                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
TELEPHONE: (301) 309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 4483 base pairs
TYPE: nucleic acid
                                                                                                                                                                FILING DATE:
ATTORNEY/AGENT INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 558; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: double
                                                                                                 PRIOR APPLICATION DATA
APPLICATION NUMBER:
      APPLICATION NUMBER:
FILING DATE:
                                                                     CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
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US-08-961-527-363
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1712E OF TURMENTON: Streptococcus pneumoniae Polynuclaotides and Sequences
NORRS OF SEQUENCES, 191
CORRESPORMER ADDRESS: Statement Inc.
                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                         2741 CTACAACCACAACAACTACAACCACGACAACTACAACAACAACAACAACAACAAGAAAC 2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   966 CAGAGICAGAGGIGGIGACATCCIGTACITCGACAIGACTAICAACAAGAGAGGCTACAA 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1026 CCTGTTCATGAAGAACGAGACCATGTACGCCGACAACCACCGACGACGAGGACATCTACGC 1085
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              846 GAACAGATACATGTACGCCAACTCCAGACAGATCGTCTTCAACACCAGACGTAACAACAA 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            606 CANCITCICCAAGACCATCACCTTCGAGATCAACAAGAICCCAGACACCGGICTGAICAC 668
                                                                                                                                                                                                                                                                                                                                                                    666 CTCCGACTCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTT 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGACGGTAAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGA 785
                                                                                                                                                                       0; Gaps
                                                                                                        DB 3; Length 7334;
                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Diskette, 3.50 inch, 1.4Mb storage COMPUTER: HP Vectra 486/33 operating SYSPEM: MSDGS version 6.2
                                                                                                 Score 115.4, DB 3;
Pred. No. 1.2e-16;
0; Mismatches 321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Human Genome Sciences, Inc. STREET: 9410 Key West Avenue CITY: Rockville STATE: Maryland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1206 CATCTCCGGTATCTGTTCCATCGGTACCT 1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3221 CCACAACAACTACTTCTGAAACT 3249
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Patent No. 6420135
GENERAL INFORMATION:
      DNA (genonic)
                                                                                                        Query Match
Best Local Similarity 49.0%;
                                                                                                                                                                Matches 308; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: ASCII Text
CURRENT APPLICATION DATA:
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COMPUTER READABLE FORM:
; MOLECULE TYPE:
US-08-928-361B-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY
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APPLICATION NUMBER: US 08/218,018
FILING DATE: 23-MAR-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                              NAME: Pace, Gary M. REGISTRATION NUMBER: P-40,403
                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION:
TELEPHONE: 919-541-8682
TELEFA: 919-541-8689
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2004 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
LOCATION: 1..2004
OTHER INFORMATION: /not
OTHER INFORMATION: sequ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: nucleic acid
STRANDEDNESS: singl
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HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-471-033-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH:
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                                                                   3076 TCAGCAAGTATCTCAGCGTCTGAATCGGCATCAACGAGTGCGTCGGCCTCAGCAAGCGCA 3135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3370 TCAGCGTCGACAAGTGCGTCGGCCTCAACCAGTGCATCTGAATCGGCATCAACCAGTGCG 3429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1097 GTGAGCAGACCAAGGACATCAACGACAACATCATTCCAGATCCAGCCAATGAACAACA 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3490 TCAACCAGTGGGCTCGGCTTCAGGGTGAGCTTCAGCAAGTACGAGGTGTTTCA
                                                                                                                                                                                                                                                                              3136 AGTACCFCAGCGTCAGC ----TTCCGCCTCAACCAGTGGGTTCGGCTTCAGCAAGCAG 3189
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3190 AGTGCGTCAGCCTCAGCAAGTATCTCAGCGTCTGAATCGGCATCAACGAGTGCGTCTGAG 3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3250 TCAGCATCAACGAGTACGTCAGCCTCAGCAAGCACATCAGCTTCTGAATCGGCATCAACC 3309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 977 GTGGTGACATGCTGTACTTCGACATGACTATCAACAAGACAAGGCCTACAACCTGTTCATGA 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3310 AGTGCGTCAGCCTCAGCATCGACAAGGGCCTCAGCTTCAGCAAGTACCAGTGCTTCAGCC 3369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1037 AGNACCAGACCATGTAGGCCGACAACCACTCCACCGAGGACATCTACGCCATCGGTCTGC 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1157 CTTACTACTACGCTTCCCAGATCTTCAAGTGCAACTTCAAGGGTGAGAACATCTCCGGTA 1216
737 ACAICAACAICCTGTICAACTCCTTGCAGTACACCTCGTCAAGGACTACTGGGGTA 796
                                                                                                                                                                             797 ACGACCTGAGATACAACAAGAGTACTACATGGTCAACATGGACTACTTGAACAGATACA 856
                                                                                                                                                                                                                                                                                                                                                           857 TGTAGGGGAACTGCAGACAGATGGTCTTCAACAGCAGGTAACAACAACAACGACTTCAACG 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   917 AGGGTTACAAGATCATCATCAAGOGTATCAGAGGTAACACCAACGACACCAGAGTCAGAG 976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The parton (opensy W The parto
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3550 TCAGICICAGCAICAACAAGIGCIICAGCCICAGCAICGACAAGIGC 3596
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JURREWY APPLICATION DATE: 15/08/471,033
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FILING DATE: 09-SEP-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CIBA-GEIGY Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 18, Application US/08471033
Patent No. 5770696
GENERAL INFORMATION:
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STREET: 7 Skyline Drive
CITY: Hawthorne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
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COMPUTER READABLE FORM:
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TITLE OF INVENTION: NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
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78 CGIGGAGGCCGGCATCGGTCCCAAGGGCATCAGCTTCGGCGTGAGCGTGAACTACCAGCA 437
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      438 CACCGAGACCGTGGCCCACGAGTGGGGCACCCAGCACCGGCAACACACCAGCAGTTCAACAC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   498 OGOCHGOGGGGGGTACOFGAAGGCGAAGGTGGGCTACAAGAAGGTGGGGAACGGGGGACAAT 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            228 CGGTGAGGACAGAGGTAAGGTCATCGTCACCCAGAACCAGAACATCGTCTACAACTCCAT 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88 GIAGGAGTCCTTCTCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTGCC 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        738 CAAGAAGCAGGACAACCTGCTGAACAAGCAAGCATGATGATGCTGGAGACCAAGCAGC 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   558 CGGCGTGATCCAGCAGATCAAGGCCAAGACCGCCAGCATCATCGTCGACGACGCGAGCG 917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51 CCTGTTGAAGGACATCATCAACGAGTACTTCAACAACAACATCAACGACTCCAAGATCCTGTC 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              348 AGGTRACACONTORICGNOTOCGTCAAGAACAACTGCGGTTGGTGCATGGGTATCATCTC 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 578 CCAGNACGGCATCGCCATCACCAGCATGGACGACTTCAACAGCCACCCATCACCCTGAA 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            408 CAACTICCIGGICTICACCCIGAAGCAGAAGGAGGACTCCGAGCAGICCATCACTTCIC 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       468 CTACGACATCTCCAACAACGCTCCTGGTTACAACAAGTGGTTCTTGGTCACGGTCACGAA 527
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     542 GATCCCAGACACCGGTCTGATCACCTCCGACTCCGACAACATCAACATGTGGATCCGTGA 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note- "Maize optimized DNA
sequence for VIP1A(a) 80 kd protein from AB78"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 6.8%; Score 93.4; DB 1; Length 2004;
Best Local Similarity 44:88 Pred. No. 6.16-12;
Matches 529; Conservative 0; Mismatches 51; Indels 15;
                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: CGC 1695/CIP3/DIV7 - SOLv3
APPLICATION NUMBER: US 08/037,057
FILING DATE: 25-MAR-1993
ATTORNEY/AGENT INFORMATION:
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978 CCTGACCCTGAGGGCCCTGAGCTGAGCTACCCCGACGAGATCGAGGGTCGAGGG 1037
                                                                                                                                                   11998 GAACHCCGCCAAGGAGGAGCCAAGCAGCTGAACGACGCAGCAGTTCAAGGACGT 1157
                                                                                                                                                                                                                                                                                                                      1218 CCTGTACGACAACGCCGAGAGCAACGACAACAACATCGGCAAGTGGACCAACAACACAT 1277
                                                                                                                                                                                                                                                                                                                                                     942 TATCAGAGGTAACACCAACGACACCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACAT 1001
                                                                                                                                                                                                                                                                                                                                                                         GACTATCAACAACAAGGCCTACAACCTGTTCATGAAGAACGAGACCATGTACCCGACAA 1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1338 GACCTGAACACCGACGACAGAGAAACT-----GAACAAGAACGCGAACTACAT 1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCACTCCACCGAGGACATCTACGCCATCGGTCTGGGTGAGCAGGACCAAGGACATCAACGA 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            392 CAGCCTGTACATGAAGAGCGAGAAGAACACCCAGTGCGAGATCACCATCGACGGGGGGAGAT 1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1038 CCTGCTGTACTACAAGAACAAGCCCATCTACGAGAGCAGGGTGATGACCTATGTAGAGGA 1097
                                                                                                                                                                                                          881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1452 ATROCCCATCACCACCAAGACCGTGAACGTGAACAAGGACAACTACAAGGGCCTGGACAT 1511
                                                                                                                                                                                                                                                                              882 CTICAACAGGAGGTAACAACAAGAGGAGGTTACAAGAGGTTACAAGATCAICAAGAGG 941
                                                   702 CITCTACATCTTCGCCAAGGAGTTGGACGGTAAGGACATCAACATGCTGTTCAACTTCTT 761
                                                                                                                           762 GCAGTACACCAACGTCGTCAAGGACTACTGGGGTAACGACCTGAGATACAACAAGGAGTA 821
                                                                                                                                                                                                                                          1158 GAGCCACCTGTACGACGTGAAGCTGACCCCAAGATGAACGTGACCATCAAGCTGAGCAT
                                                                                                                                                                                                      1182 CAAGTCCAACTTCAACGGTGAGAACATCTCCGGTATCTGTTCCATCGGTACCTAC 1236
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/471,044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: CIBA-GEIGY Corporation
STREET: 7 Skyline Drive
A report of the control of the contr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ploppy disk
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MEDIUM TYPE: Floppy
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08-004 044 06-001,044 06-001-1995

PRIOR APPLICATION DATA

FILING DATE: 06 CLASSIFICATION:

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/note= "Maize optimized DNA
sequence for VIP1A(a) 80 kd protein from AB78"
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APPLICATION NUMBER: US 08/463,483
FILING DATE: 05-JUN-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                     FILING DATE: 09-SEP-1994
PRADE APPLICATION DATA:
APPLICATION NUMBER: US 08/218, U18
FILING DATE: 23-MAR-1994
APPLICATION LOVER: US 08/037,057
                                                                                                                                                                               US 08/314,594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Pace, Gary M.
REGISTRATION NUMBER: 40,403
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TELECOMMULICATION INFORMATION:
TELEPHONE: 919-541-8582
TELEFAX: 919-541-8689
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 25-MAR-1993
ATTORNEY/AGENT INFORMATION:
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LOCATION: 1..2004
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SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                            APPLICATION NUMBER:
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942 INTCAGAGGTAACACCAACGACACCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACAT 1001

1902 GACTATCAACAACAAGGCCTACAACCTGTTCATGAAGAAGGAGCCATGTACGCCGAGAA 1961

1062 CCACTCCACCGAGGACATCTACGCCATCGGTCTGCGTGAGCAGCAAGGACATCAACGA 1121

1512 CATCGCCCACAACACCAACACCCCATCAGCCTGCACTCAACACCAAC 1566

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MENICANT. JOHN 5.1 S. AND MAGICAL RESEARCH TRAFFILL TO THE STATE OF THE STAT
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                        US-09-476-242-16
US-09-476-242-17
US-09-476-242-9
US-09-476-242-10
US-09-664-761-19608
US-09-664-761-19608
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Best Local Similarity 99.8%; Pred. No. 0;
Matches 1368; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Apple Macintosh Microsoft Word 6.0
SPO ID NO 3
DEMOTH: 1371
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; Sequence 3, Application US/09350756
; Patent No. US/20020034521A1
; GENERAL INFORMATION:
            ORGANISM: Artificial
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                                                                                                                                                                                                                                     TYPE: DNA
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                                                                                                                                                                                                            : Search time 57 Seconds
(without alignments)
8533.524 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the cotal score distribution.
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Copyright (c) 1993 - 2002 Compugen Ltd.
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-09-476-242-13
-09-864-761-19241
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US-09-350-756-6

US-09-350-756-5

US-09-350-756-1

US-09-350-756-4

US-08-981-087A-6
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Garched: 370360 segs, 177393727 residues

Portal number of hits satisfying chosen parameters:
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Orians D8 seq length: 2000000000

Oct-processing: Misimum Motor D4

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Listing liret 45 summaries
                                                                                                                                                          using sw model
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Match Length DB
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Perfect score:
Sequence:
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US-10-051-952-4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961 GACACCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACATGACTATGAAGAAGAAGAGGC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1201 GAGAACATCTCCGGTATCTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGGTGACTGG 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201 GAGAACATCTCCGGTATCTGCATCCATCGGTACCTACGATTCCGTCTGGGTGTGGGTGACTGG 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361 ATCGACTCCGTCAAGAACAACTCCGGTTGCTCCATCGCTATCATCTCCTAGACTTCCTGGTC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ITCACCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTAGGACATCTCC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141 AACAIGAAGAICTACAICAACGGTAAGCTGAICGACCCATCAAGGTCAAGGAGTIGACC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           501 GGTATCAACTTCTCCAAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACCAGGTCTG 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721 GAGTTGGACGGTAAGGACATCAACATGCTGTTCAACTCCTTGCAGTACACCAACGTGGTC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781 AAGGACTACTGGGGTAACGACCTGAGATACAACAAGAAGTACTACATGGTCAACATGGAC 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781 ANGGACTACTGGGGTAACGACCTGAGATACAACGAGGTACTACTACATGGTCAACATCGAC 840
121 CGTAAGAACACCTTGGTCGACACCTCCGGGTTACAACGCCGAGGGTCTGCGAGGAGGGTGAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 AACATGAAGATCTACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1141 CAGCCAATGAACAACITACTACGCTTCCCAGATCTTCAACTCCAACTTCAACGCTTCAACGCTTCAACGCTTCAACGCTTCCAACTTCAACGCTTCCAACTTCAACGCTTCCAACTTCAACGTTCAACGCTTCCAACTTCAACGTTCAACGTTCAACTTCAACGTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTCAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTTAACTT
                                                                                                181 GTCCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGA
                                                                                                                                                181 GTCCAGCTGAACCCAATCTTCCATTCGACTTCAAGCTGGGTTCCTCCGGGTGAGGACAGA
                                                                                                                                                                                                                                                                             241 GGTNAGGTCATCGTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTC
                                                                                                                                                                                                                                                                                                                                      241 GGTAAGGTCATCGTCACCAGAAGGAGCATCGTCTACAACTCCATGTACAGGTCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCATCTCCTTCTGGATCAGAATCAAAGTGGGTCTCCCAACTTGCCAGGTTACACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101 TCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACAACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481 AACAACGCICCIGGITACAACAACTGGITCITCGICACCGICACCAACAACAIGAIGGGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        561 ATCACCTCCGACTCCGACACATCAACATCTGGATCCGTGACTTCTACATCTTCGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841 TACTTGAACAGATACATGTACGCCAACTCCAGACAGATCGTCTTCAACACCAGACGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841 TACTTGAACAGATACATGTACGCCAACTCCAGACAGATCGTCTTCAACACCAGACGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901 AACAAGGACTICAACGAGGGTIACAAGATCATCAAGCGTATCAGAGGTAACACCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901 AACAACGACTTCAACGAGGTTACAAGATCATCATCAAGGGTATCAGAGGTAACACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACHACCTGTTCATGAAGAAGAGGGGTGTAGGGGGGAGAACCACTCCACCGAGGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 021 TACAACCTGTTCATGAAGAAGGAGCCATGTACGCCGACAACCACTCCACGGAGGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081 TACGCCATCGGICTGCGTGAGCAGACCAACGACATCAACGACAACATCATCTTCCAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1141 CAGCCAATGAACAACACTACTACTACGTTCCCAGATGTCAAGTCCAAGTTCAAGTTCAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          021
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1261 TACAGACACACTACTTGGTTCCAACTGTCAAGCAGGGTAACTACGCCTCCTTGCTGGAG 1320 1261 TACAGACACACAACTACTTGGTTCCAACTGTCAAGCGIAACTACGCCTCCTTGCTGGAG 1320 1321 TCCACTTCCACCCACTGGGGGATTCGTCCCAGTCTCCGAGTAATAGGAATTC 1371 1321 TCCACTTCCACCCACTCGGGGATTCGTCCCCCAGTCTCCCGAGTAATAGGAATTC 1371 APPLICANT: Walker, Patricia TITLE OF INVENTION: Methods of Administering Botulinum Toxin TILE REFERENCE: 2933CJP
CURRENT APLICATION KUMBER: US/10/051,952
CURRENT FILING DATE: 2002-01-17
PRIOR APPLICATION HUMBER: 09/730,237
PRIOR ELIGNG DATE: 2000-12-05
PRIOR ELIGNG DATE: 2000-12 Sequence 4, Application US/10051952 Patent No. US20020107199A1 GENERAL INFORMATION: SOFTWARE: Patentin Ver. 2.1 TYPE: DNA ORGANISM: botulinum toxin

13 ACCATCCCATTCAACATCTTCTCTACAACAACAACACTCTGTTGAAGGACATCATCAAC 72 Length 3876; Indels Score 662; DB 12; Pred. No. 5.3e-156; 0; Mismatches 430; 48.3%; Best Local Similarity 5s.: Matches 920; Conservative

2527 ACRAINCCCTITRAINTITITICATATACTAATAATICITITAAAAGATATAATIAAT 2586 2707 CCAATATTTCCATTTGACTTTAAATTAGGTAGTTCAGGGGAGGATAGAGGTAAAGTTATA 2766 2767 GTAACCCAGAATGAAATATTGTATATAATTCTATGTATGAAAGTTTTAGCATTAGTTTT 2826 133 TIGGICGACACCICCAGGITACAACGCCGAGGICICCGAGGAGGAGGTGACGICCAGCIGAAC 192 73 GAGTACTICAACAACATCAACGACTCCAAGATCCTGTCCCTCCAGAACCGTAAAGAACACC 132 2647 TIAGTGGATACATCAGGATATAATGCAGAAGTGAGTGAAGAAGAGGAGGTTTAAT CCANTCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGGGTAAGGTCATC 253 GTCACCCAGAACGAGAACATCGTCTACCCATGTACGAGTCCTTCTCCCTTC

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SOFTWARE: Apple Macintosh Microsoft Word 6.0

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CTHER INFORMATION: /mote-"synthetic sequence encoding botulinum neurotoxin" 88-09-350-756-6
                                                                                                                                                                                                                                                                                                                                                                                                                              .03 ATCCTGTCCCTGCAGAACCGTAAGAACACCTTGGTCGACACCTCGGGTTACAACGCCGAG 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64 ATCCTGTCCCTGTCCTACCGTGGTGGTCGTCTGATCGACTCCTCCGGTTACGGAGCCACC 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .63 GTCTCCGAGGAGGGTGACGTCCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGGGT 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198 GACATCCAGACCTACCTGCAGAAGGAGTACACCATCATCTCTGTATCAAGAAGGACTCC 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185 GUTTGGTCCATCGGTATCATCTCCCAACTTCCTGGTCTTCACCCTGAAGCAGAACGAGGAC 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                158 GGTTGGAAGGTCTCCATCAAGGGAAACGTATCATCTGGACCTGATCGACGTCAACGCC 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        418 AAGTCCAAGTCCATCTTCGAGTACTCCATCAAGGACAACATCTCCGACTACATCAAC 477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         502 AAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATCTACATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78 AAGTGGTTCTCCATCACCATCACCAACGACCGTCTGGGTAACGCCAACATCTACATCAAC 537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     562 GGTAAGCTGATCGACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGACC 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       538 GGTTCCTGAAGAAGACGGGAAAAAATCCTGAAACCTGGACCGTATCAACTCCTCCAACGAC 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           522 ATCACCTTCGAGATCAACAAGATCCCAGACACGGTCTGATCACCTCCGACTACGACAAC 681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              598 ATCGACTTCAAG------CTGATGAACTSTACCGACACCCGG3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       582 ATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGTAAGGACATC 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          334 AAGTTOSTCTGGATCAAGGACTTGAACATCTTGGGTGGTGAGCTGAACGCCACCGAGGTC 693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42 AACATCCTSTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTGGGGTAACGAC 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302 CIGAGAIACAACAAGGAGIACIACAACAIGGICAACAICGACIACIIGAACAGAIACAIGIAC 861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     862 GCCAACTOCA---GACAGATOGTCTTCAACACCAGACGTAACAACAACACGACTTCAACGAG 918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  814 TACTICIOCAAGGOCICCAIGGGIGAGACGCCCCTCGIACCAACAACAACAAGGOCGCC 873
                                                                                                                                                                                                                                                                                                                        43 AACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAACAACATCAACGACTCCAAG 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24 ATCAACGTCGGFTCCGACGTCATCTTCAACGACATCGGTAACGGTCAGTTCAAGCTGAAC 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43 ------TIGCOAGGITACACATCATCACGGCTCCATCAGAAGAACTCC 384
                                                                                                                                                                                                                                                                                                                                                                     4 AAGGACACCATCCTGATCCAGGTCTTCAACAACTACATCTCCAACATCTCCTCCAACGCC 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23 TCCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACAGAACGAGAACATCGTCTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84 AACTCC-----GAGAACTCCAACATCACCGCCCACCAGTCCAAGTTCGTCGTCTACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                283 TCCATGTACGAGTCCTTCTCCATCTCCTTCTGGATCAGAATCAACAAGTGGGGTCTCCAAC
                                                                                                                                                                                                      Score 217.4; DB 10; Length 1347;
Pred. No. 4c-45;
                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                               0; Mismatches 516;
                                                                                                                                                                                                                 15.98;
                                                                                                                                                                                                                                        Best Local Similarity 52.5%
Matches 631; Conservative
                                                                               ORGANISM: Artificial
SEQ ID NO 6
LENGIH: 1347
                                                        TYPE: DNA
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                                  673 TOCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCCAAGGAGTTGGACGGT 732
                                                                                                                                                              3187 TCTGATAACATCAATATGTGGATAAGAGATTTTTATATATTTGCTAAAGAATTAGATGGT 3246
                                                                                                                                                                                                                 733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTACTGG 792
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APPLICANT: John S. Lee
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Patent No. US20020034521A1
GENERAL INFORMATION:
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US-09-350-756-6
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; OTHER INFORMATION: /note="synthetic sequence encoding botulinum neurotoxin" US-09-356-156-1
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                                                         240 CGACATCATCTACAACGGAAGATACCAGAACTTCTCCATGTCCTTCTGGGTCCGTATCCC 299
                                                                                                                                                                                                                                                                                                                                                                                                                               375 GAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTTCCTGGTCTTCACCCTGAAGCA 434
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267 GAACATCGTCTACAACTCCATGTACGAGTCCTTCTCCATCTCCTTCTGGATCAGAATCAA 326
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, Sequence 1, Application US/09350756
; Patent No. US20020034521A1
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-05-330-756-5
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                                                                                                                                                                                                                                                                                                                       934 OGTAACATCAACAACGACAACATCGTCCGTGAGGTGACTACATCTACCTGAACATCGAC 993
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                                                                                                       874 ATCAACTACCAGAACCTGTACCTGGGTCTGCGTTTCATCATCAAGAAGGCCTCCAACTCC 933
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Pred. No. 2.5e-40;
0; Mismatches 333; Indels 48; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27 CATCTTCTCCTACACCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAA 86
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Matches 496; Conservative 0
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421 TTCACCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCC 480
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TITE OF UNEWRINGS Declaring whereforth Vaccine
TLE REFERENCE, 103/134/54P FLID 98-21
CHRENP PRICHOLOGY WARREN 1898-95
CHRENP FLID OF WARREN 1898-95
RRALIER APPLICATION WARREN 1898-97-19
RRALIER TRING DATE 1998-97-19
WARREN OF STUD NOS: 11
WARREN OF STUD NOS: 11
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                                                                                                                                                                                       1400
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Pricert to .MS/0007043571A (MS/0007043571A (MS/0007043571A)
APPLICANT O.S. ATTY Wedical Reseach institute for infectious Diseases APPLICANT O.S. ATTY Wedical Reseach institute for infectious Diseases APPLICANT Feter Publico
                                                                                                                                                                     24 AAGAACACCTTGGTCGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTC 183
                                                                                                                                                                                                        87 TCCAATCACCTGATCGACCTGTCTGCTACCCTTCCAAAACCATCGGTTCTAAAGTT 146
                                                                                                                                                                                                                                                 184 CAGCTGNACCCNATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGGT 243
                                                                                                                                                                                                                                                                           147 AACTTGGATGGATGAATGAATGAGATGCAGGGG-----TTGAATCTTGGAATGTTCC 200
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                                                                                                                                                                                                                                                                                                                                                                                                                      304 ATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTGCC------AGGTTAC 354
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    561 AATCTGGGTAACATGCACGCTTCTAATAACATGATGTTCAAACTGGAGGGTTGTGGAG 620
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                                                                                64 ATCATCAACGAGTACTTCAACAACATCAACGACTCCAAGATCCTGTCCCTGCAGAACCGT 123
12.3%; Score 168.8; DB 10; Length 1338;
54.8%; Pred. No. 5.6e-33;
14e 0; Mismatches 327; Indels 42; Gaps
                                                                                                                        27 ACCTTCACTGAATACATCAAGAACATCATCAATACCTCCATCCTGAACTGCGCCTAGGAA 86
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APPLICANT: Jonathan F. Smith
APPLICANT: Mark T. Dertzbaugh
APPLICANT: Leonard Smith
                                        Matches 447; Conservative
                      Best Local Similarity
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US-09-350-756-4
    Query Match
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OTHER INFORMATION: /note="synthetic sequence encoding botulinum neurotoxin" SOFTWARE: Apple MacIntosh Microsoft Word 6.0 SEQ ID NO 4

in Ouery Match 11.89; Score 162.4; DB 10; Length 1400; Best Local Statlarity 5149, Pred No. 2.58-31; And Matches 468; Conservative 0; Mismatches 341; Indels 51; Matches 400; Mismatches 341; Indels 51; And Matches 341; Indels 51; And Mismatches 341; And Mismatches 341; Indels 51; And Mismatches 341; And Mismatches 3

16 ATCCCATTCAACATCTTCTCCTACAACAACACCCTGTTGAAGGACATCATCAACGAG 75

57 ATTCCTTTTAAGCTTTCTTCTTATACAGATGATAAAATTTTAATTTCCTACTTCAAGAG 126

76 TACTICAACAACATCAACGACTCCAAGATCCTGTCCTGCAGAACCGTAAGAACACCTTG 135

196 ATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGGTAAGGTCATCGTC

247 ACTAACAAAAACCAATTC -----GGTATCTACAACAACAACATC

421 AACTGTATGAGAGACAACAACTGGGGTTGGAAGGTCTCTTAACCACAAGAGATCATT-480 364 GACTCOGTCA---AGAACAACTCCGGTTGGTCCATCGGTATCATCTCCCAACTTCCTGGTC 420

598 ACCEGIATCRACTICICCRAGACCATCACCTICGAGAICRACAGAICCCAGACACCGGI 661 GGTAACATTCACACATCTTATTCAAGATCGTTAACTGCAGTTACACCAGA 658 CTGATCACCTCCGACTCCGACAACATCAACATCTGGATCCGTGACTTCTACATCTTGGCC

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212 TCAAGCTGGGTTCCTCCGGTGAGGACAGAGATAAGGTCATCGTCACCCAGAACGAGAACA 271
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Patent No. US20020034521A1
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814 TIGRAGGACTTCTGGGGTAACTACTTGCTTAACGACAAGGAATACTACTTATTAAAGGTG 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92 ACGACTCCAAGATCCTGTCCCTGCAGAACCGTAAGAACACCTTGGTCGACACCTCCGGTT 151
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32 TCTCCTACACCAACAACTCCCTGTTGAAGGACATCATCAACGAGTACTTCAACAACATCA 91
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 151.6; DB 8; Length 1313;
Pred. No. 1.1e-28;
0; Mismatches 359; Indels 48;
                                                                                                                                                                              MAPPLICANT: Rimore, Michael J.
PRELICANT: MARGINER PROFESSOR
PRELICANT: MARGINER PROFESSOR
PRELICANT: TRIBENIL ACIDATE A.
PRELICANT: TILENIL I ACIDATE A.
MIGHER OF SEGURESS.
PROFESSOR TO BE PROFESSOR THE PROFESSOR AND USE PHEROP
                                                                                                                                                                                                                                                                                                        1100 No. US20020091304Alth Glebe Rd. 8th floor
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21D: 1200-4241

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OPRENTIK: IRR PC COMPATILIA

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OPPRANTE PERIORICI Release 11.0, Version 11.30

APPLICATION NYMERS: 195/0951.087A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 27-MAY-1998
CLASSIFICATION: 424
PRIOR REPLICATION DATE: CTGE96/01409
FILING DATE: 12-UN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: GB 9511909.5
FILING DATE: 12-UNT-1995
ATTORNEY/AGENI INFORMATION:
NAME: CTAMFORD, ATTORNEY
RESISTRATION NUMBER: 25,327
                                                                                                                                            Sequence 6, Application US/08981087A
Patent No. US20020081304A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-816-4000
                                           838 GACTACTTGAACAGATACAT 857
                                                                    874 TTAAAGCCAAACAACTTCAT 893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: DNA (genomic)
US-08-981-087A-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 1313 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 11.1%;
Bost Local Similarity 53.3%;
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                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                       CITY: Arlington
                                                                                                                                                                                                                                                                                                                                                                   USA
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PARLICANT (AS Akea Wester) Research Institute for Infectious Diseases
APRICANT; Son S. Keep Wester)
APRICANT; Son S. Keep Wester, Self-
OFFICANT; Son S. Keep Wester, Self-
OFFICANT, Self-
OF
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332 GGGICTCCAACTF-----ACCAGGTTACACCATCATCGACICCGTC---AAGAACA 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               104 ACTICAACAAAGITAAGCIGAACAAGGAATACAACAACAACAACGACGACGAACAACA 363
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                                                                                                                                                            272 TCGICTACAACTCCATGTACGAGTCCTTCTCCATCTCCTTCTGGATCAGAATCAACAAGI 331
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ORGANISM: Clostridium botulinum
                     . FEATURE:
US-09-350-756-10
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Score 126.6; DB 10; Length 702; Pred. No. 1.5e-22; 0; Mismatches 289; Indels 42; Ouery Match Best Local Similarity 53.69; Matches 382; Conservative

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64 ATCATCAACGAGTACTTCAACAACATCAACGACTGCAAGATCCTGTGCCTGCAGAACCGT 123 19 ACCTICACTGAATACATCAAGAACATCATCAATACCTCCCTACCTGAACCTACGCTACGAA 78 ò

Cobied from 109 10186 or 05-05

415 CIGGECTICACCCIGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTICTCCTACGAC 474 373 ATCATCTGGACTCTGCAGGACACTCAGGAAATCAAACAGCGTGTTGTATTCAAATACTCT 432 175 ATCTCCAACAACGCTCCTGGTTACAACAA - - GTGGTTCTTCGTCACCGTCACCAACAAC 531

712 ITCGCCAAGGAGITGGACGGTAAGGACAICAACTGITCAACTCCITGCA 764

Sequence 2, Application US/09350756 Patent No. US20020034521A1 GENERAL INFORMATION: US-09-350-756-2

APRICONTY 18. Any Medical Reseach Institute for infectious Diseases APRICONTY 19. May Medical Reseach Institute for Infectious Diseases APRICONTY (Medical Research Sections) Towns 19. May PRICONTY (Medical Research Section Research Resea

TITLE OF INVENTION: Bothlinum Yeurotoxin Vaccine FILE NETERENCE: 003/124/58 RID 98-21 CURRENT APPLICATION NAMERS: US/09/350,756 CURRENT FILING DATE: 1999-07-09

; OTBER INFORMATION: /note="synthetic sequence encoding botulinum neurotoxin" US-09-350-756-2 EARLIER PELLKA UNMERS: US 60/092.416 EARLIER FILIKO DATE: 1998-07-10 NUMERO FS RED IN OSS: 11 SOFTWARE: APPLE MACLINGSH MIGNOSOFT WORD 6.0 ESSOED IN OSS: 1344 LENGTH: 1344 ORGANISM: Artificial FEATURE: TYPE: DNA

Onery Match 8.84, Score 120,4; DB 10; Length 1341; Matches 412, 20,73, Pred. No. 6.96-21; Indels 54; Gaps Matches 412; Conservative D: Mismatches 346; Indels 54; Gaps

64 ATCATCAACGAGTACTTCAACAACATCAACGACTCCAAGATCCTGTGCAGAACCGT 123

.84 CAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGGGT 243 130 GANCIGANGACAAGACCAGTICAAACIGA

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238 GTTTCCTTCTGGGATTCGTATCCGGAAATACAAGAAGGGGGATCGGGAATTACAFCGAC 297

46 CCAGGTTACACCATCATCGACTCGGTCAAGAACAACTCGGGTTGGTCCATCGGTATCATC 405 898 AATGRATACACCATCATCAACCACCACCGC 357 a õ a ò

406 TOCAACTTCCTGGTCTTCACCCTGAAGCAGAGGAGGACTCCGAGCAGTCCATCAACTTC 465 66 TCCIACGACATCTCCAACAACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCGTCACC 525 a g ò

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38 ATCAAAGACATCCGTGAAGTTATCGCTAACGGTGAAATCATCTTCAAACTGGAGGGTGAC 597 46 CCAGAGACGGTCTGATCACCTCGGACTCCGACACATCAACATGTGGATCCGTGACTTC 705 qq ò ò

106 TACATETTCGCCAAGGAGTTGGACGGTAAGGACATCAACATCCTGTTCAACTCCTTGCAG 765 '66 TACACCAACGTCGTCAAGGACTACTGGGGTAACGACCTGAGATACAACAAGAGAGTACTAC 825 g à

94 TACTCCGNATACCTGNANGACTTCTGGGGTAATCCGGTGATGTACAACAAAGAATACTAT 753 셤 ò 윰

RESULT 10 US-09-864-761-20241

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OTHER INFORMATION MAP INFORMATIO
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43.3%; Pred. No. 4.2e-14;
                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/864,761
CURRENT FILING DATE: 2001-05-23
                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 60,180,312
PRIOR FILLING THEN 2000-05-04
PRIOR PELING THEN 12000-05-26
PRIOR PELING THEN NUMBER: US 60,207,456
PRIOR PELING THEN NUMBER: US 69,632,366
PRIOR PELING DATE: 2000-08-03
Patent No. US20202088751
Patent No. US20208875341
GBREAL TMPRMANION:
APPLICAPM.
                                                                                                                           David R.
                                                                                                                                                                                                                                            FILE REFERENCE: Aeomica-x-1
                                                                                            APPLICANT: Penn, Sharron G.
APPLICANT: Rank, David R.
APPLICANT: Hanzel, David K
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ORGANISM: Homo sapiens
PEATURE:
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Best Local Similarity 43.3 Matches 534; Conservative

965 CCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAACAAGGCCTACA 1024 1025 ACCTGTTCATGAAGAACGAGACCATGTACGCGGACAACCACTCCACGGAGGACATCTACG 1084 185 AGCTGAACCCAATCTTCCCATTCGACTTCBAGCTGGGTTCCTCCGGTGAGGGACAGAGGTA 244 424 484 245 AGGTCATCGTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCCA 304 387 CONTONOTACIACIATORO ACORO CANTONO CATORO CANTONO A 446 567 CCACCACCACCACCACCATCACTACCACCACCACCACCATGACTACCACTACCACCACCA 545 TGAAGATCTACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACGGGTA 604 605 TCAACTICTCCAAGACCATCACCTICGAGATCAACAAGATCCCAGACACGGTCTGATCA 664 725 TGGACGGTAAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGG 784 845 TGAACAGATACATGTAGGCCAACTCCAGAGAGGATCGTCTTCAACAGCAGAGGTAACAACA 904 905 ACGACTICAACGAGGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACA 964 125 AGAACACCTTGGTCGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCC 305 TCTCCTTCTGGATCAGAATCAACAGTGGGTCTGCAACTTGCCAGGTFACACCATCATGG TCACGATGACCATCCCATTCAACATCTTCTCCTACACCAACACTCCCTGTTGAAGGACA TCATCAACGAGIACTICAACAACAICAACGACICCAAGAICCIGICOCIGCAGAACCGIA MATCH STANDARD AND ACT CONTINUE OF THE STANDARD ACT COT OF THE STANDARD ACT OF THE STA 425 CCCIGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACA 565 CCTCCGACTCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGT 785 ACTACTGGGGTAACGACCTGAGATACAACGAGGAGTACTACATGGTCAACATCGACTACT Š

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1205 ACATCTCCGGTATCTGTTCCATCGGTACCTACA 1237
                                                                                                                      1347 CCACCACCACCACCACCACCATCACTACCACCA 1379
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Sequence 3471, Application US/09864761 Patent No. US20020048763A1 Copied from 10910186 on 05-05-2004

CORRENT PRIZECTION ORDERS: 189.009464,761, CORRENT PLINED DATE: 2001-10-33 PRIZECTION ORDERS: 2001-10-33 PRIZECTION DATE: 2001-10-33 PRIZECTION DATE: 2001-10-34 PRIZECTION DATE: 2000-10-34 PRIZECTIO

PRODE FILMED NATE: 2001-01-10
PRIOR PLINED NATE: 2001-01-10
PRIOR PLINED NATE: 2001-01-10 APPLICATION NUMBER: PCI/US01/00666 PRIOR APPLICATION NUMBER: US 60/236,359 PRIOR FILLING DATE: 2000-09-27 PRIOR APPLICATION NUMBER: PCI/US01/00660

PRODE PRINCENTRA WIGHER PETP (SED) / 0065
PRODE PLIZED DATE (1907-1006)
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PRIOR PILEMANE 2000/06-50
PRIOR APPLICATION NUMBER: US 90-774,203
NUMBER OF SEQ ID NOS: 2010-10-39
NUMBER OF SEQ ID NOS: 49117
SEQ ID NO 3471

TYPE: DNA LENGTH:

ORGANISM: Homo sapiens

PRATURE:
OTHER INFORMATION: MAP TO ACOGE47 9
OTHER INFORMATION: EXPRESSED IN LUNG, SIGNAL - 17
OTHER INFORMATION: EXPRESSED IN PLACENTA, SIGNAL -

1145 CAATGAACACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAACGGTGAGA 1204 RESULT 11 US-09-864-761-3471

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65 TCATCAACGAGTACTTCAACAACATCAACGACTCCAAGATCCTGTCCCTGCAGAACCGTA 124 5 TCACGATGACCATGCCATTCAACATCTTCTCTACAACAACAACTGCCTGTTGAAGGACA 64 Ouery Match 6.8%; Score 93.4; DB 10; Length 15 Bost Local Similarity 43.8%; Pred. No. 4.6e-11, Shatches S44; Conservative 0; Mismatches 696; Indels 8 ð 용 ò a

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3; Length 1973;

125 AGAACACCTTGGTCGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCC 184 185 AGCTGNACCCANTCTTCCCATTCSACTTCAAGCTGCGTTCCTCCGGTGAGGACAGGTA 483 ACCACCATCACTACAACCACTACCACCACCACCACCATCACTACGACCA--CCACCATAA 245 AGSTCATCGTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCCA ò 8 à

305 TCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCG 364

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365 ACTCCGTCAAGAACACTCCGGTTGGTCCATCGGTATCATCTCCAACTTCCTGGTCTTCA 424 CCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACA 484 \$25

605 TCAACTICTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGTCTGATCA 664

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785 ACTACTGGGGTAACGACTGGGATACAAGGAGTACTACATGGTCAACATGGTACT 844 ö 셤 ò 셤

845 TGAACAGATACATGTACGCCAACTCCAGACGAGTCGTCTTCAACACGAGGTAACAACA 904

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1034 TGAAGAAGGAGCATGTACGCCGACAACCACTCCACCGAGGACATCTACGCCATCGGTC 1093
                                                                                         988 ACAACTACAACAACAACCACGGAACCAACCACAACTACAAGCACAACGACGACTACGACA 1047
                                                                                                                                                                                  1094 TGGGTGAGGAGGAGGAGGACATCAAGGACAACATCATCTTCCAGATCCAGCCAATGAACA 1153
                                                                                                                                                                                                                                                                           1048 ACTACAAGGACTAGGACACCATCTAGGACAACCACCACCACCACTAGGCCTCGATTAGACC 1107
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Patent No. US20010014447A1
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ORGANISM: Toxoplasma gondii
US-09-216-393-345
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TITLE OF INVENTION: TROCKLARGE, GROUIT PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION: TOSS TREEDE
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905 ACGACTICAACGAGGGTTACAAGATCATCAACAAGCGTATCAGAGGTAACACCAACGACA 964
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Pred. No. 7.9e-14;
0; Mismatches 208; Indels 0;
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                                                                                                                                       DB 10; Length 867;
                                                                                                                                       Score 90.2; DB 10; Length Fred. No. 2e-13;
0; Mismatches 203; Indels
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Job time : 68 secs
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Conservative
                                     ORGANISM: Toxoplasma gondii
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Peters to ESCHIOLULAN MACHAEL ALEA
SERBALI MENDANTONI HATANATONI MACHAEL ALEA
APPLICARY: MITANAEN MACHAEL ALEA
TITLE OF INVENTION: TOXOFARAMA ONNUIL PROTEINS, NUCLEIC ACID MOLECULES, AND
TITLE OF INVENTION! USSS THERROP
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TITLE DE INVENTION: TOYOPLASMA GONDII PROFEINS, NUCLEIC ACID MOLECULES, AND
TITLE DE INVENTION: SESS THERBOP
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Dest Local Similarity 51.19, Pred. No. 26-13, 
Matches 212, Conservative 0; Mismatches 203; Indels 0,
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                                                                                                                                                                                                                                         FILE REPRENCE: T4-1-C2
CURRANT AFFLICATION NOWERS: U9/09/216,393
CURRANT FILING DATE: 1998-12-18
RABLER FILING NOWER: 06/994,825
RABLER FILING DATE: 1997-12-19
NUMBER FILING DATE: 1997-12-19
SOFFWARE: Patentla Ver. 2.0
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Patent No. US20010014447A1
GENERAL INFORMATION:
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Pred. No. is the number of results predicted by chance to have a core greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. | Col. | Free | STIMMARTES Nesu. 7, 2002, 12:21:30; Search time 3155 Seconds (without alignments) 10925.626 Million cell updates/sec gaattcacgatgaccatcc......totccgagtaataggaattc 1371 49582208 7 (2012) (1907) GenCore version 5.1.3 Copyright (c) 1993 - 2002 Compugen Ltd. Conting table: Cappe 110.0, opport 1.0

Gapp 110.0, op Pending_Patents_NA_Main:* . /cgn2_6/ptodata/l/pna/PCTUS_ using sw model IDENTITY_NUC Gapop 10.0 , Gapext 1.0 US-09-910-186A-9 nucleic search, November Perfect score: M nucleic 10910186 on 05-05-2004 sednence: 00

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51 GACATCATCAACGAGTACTTCAACAACATCAACGACTCCAAGATCCTGTCCTGCAGAAC 120
                                                                               121 CGIANGAACACCIITGGTCGACACCICCGGTIACAACGCCGAGGTCTCCGAGGAGGGTGAC 180
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100.0%; Pred. No. 3.88-279;
Live 0; Mismatches 0; Indels 0;
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TITLE OF INVENTION: RECOMBINANY VACCINE AGAINST BOTULININ
TITLE OF INVENTION: REMOMBINANY VACCINE AGAINST BOTULINING
PILLE REPERANCE: A335-65-A 067252,0107
CURRENY PRILING DATE: 2001-07-20,186A
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NUMBER OF SEQ ID NOS: 34
SOFTWARE: PastSEQ for Windows Version 4.0
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PRIOR FILING DATE: 2000-05-12
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PRICES PLICATION DATE: 2000-10-56
PRICES PLICATION DATE: 1200-10-56
PRICES PLICATION DATE: 1200-10-119
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PRIOR FILING DATE: 1999-05-12
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GENERAL INFORMATION:
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STREET: 220 Montgomery Street, Suite 2200
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Pred. No. 4.7e-130;
0; Mismatches 428;
                                                    SEE: Medlen & Carroll
: 220 Montgomery Street, Suite 2200
San Francisco
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                                                                                                                                                              United States of America
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                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Ingolia, Diane E.
REGISTRATION NUMBER: 40,027
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TELEPRANE: (415) 705-6410
TELEFAX: (415) 397-8338
TEMPORATION FOR SED ID NO: 59:
SEQUENCE CHARACTERISTICS:
LENGTH: 3876 base palits
                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                         COMPUTER READABLE FORM:
NUMBER OF SEQUENCES:
                                                                                                                                      California
                                                                                                                                                                                     ZIP: 94104
                                                          ADDRESSEE:
                                                                                                                                                                    COUNTRY:
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3127 AGCANANCTATHACATTTGANATAAATAAATTCCAGATACCGGTTTGATTACTTCAGAT 3186
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                                                                       553 TACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTC
                                                                                                                                                                               613 TCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGGTCTGATCACCTCCGAC
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ADDRESSEE: Medlen & Carroll
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APPLICANT EXDOS, UNA MELHOA FOR PROGRESS SIGNED ACTIVE SOLUTIONS TITLE OF INVENTION: A MENTION AND PROPERTION FOR THE OWN TREATMENT ON TRANSPORT OF THE OWN REPRESENCE OF THE OWN TRANSPORT OF THE OWN 973 AGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAACAAGGCCTACAACCTGTTC 1032 3487 CGAGGAGGAGATITITATATITITATATATAGACAATAATAAGAAAGCATAATAATTITATIT 3546 1033 ATGAAGAACGAGACCATGTACGCCGACAACCACTCCACCGAGGACATCTACGCCATCGGT 1092 1093 CTGCGTGAGCAGACCAAGGACATCAACGACAACATCATCTTCCAGAATCCAGGCAATGAAC 1152 3607 TTAACAGAACAACAAAGGATATAAATGATAATATATATTCAAATACAATGAAT 3666 1153 AACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAACGGGGAACATCTCC 1212 3667 AATROTTATTATTAGGGATCTGAAATRITAAATGAAATTITAATGGAGAAAATATTACT 3726 1213 GGINTCTGTTGCATGGGTACCTACAATTGCGTGTGGTGGTGGTGACTGGTACAGACACAAC 1272 1273 TACTTGGTTCCAACTGTCAAGGGGGTAACTAGGCCTCCTTGGTGGAGTCCACTTCCACC 1332 1247 AAAGATATTAATTATTAATAGCTTGGAATATAGTAATGTTGTAAAAGATTATTGG 3306 733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACIGG 792 793 GGTAACGACCTGACATACAACAAGAGTACTACATGGTCAACATGGACTACTTGAACAGA 852 853 TACATGTACGCCAACTCCAGACAGATCGTCTTCAACACCAGACGTAACAACAACGACTTC 912 913 AACGAGGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACACCAGAGTC 972 613 TCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGGTCTGATCACCTCCGAC 672 673 TCCGACAACATCAACATGTGGATGCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGT 732 NAME/KEY: CDS Page

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3367 TATATGTATGCGAACTCACGACAAATTGTTTTTAATACACGTAGAAATAATAATGACTTC 3426 3427 AATGAAGGATATAAAAATTATAATAAAAGAATCAGAGGAAATACAAATGAFACTAGAGTA 3486 973 AGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAACAAGGCCTACAACGGTGTTC 1032 1093 CTGCGTGAGCAGACCAAGGACATCAACGACAACATCTTCCAGATCCAGCCAATGAAC 1152 3607 ITAAGAGAACAAACAAAGGATATAAATGATAATATTATATTTCAAATACAACCAATGAAT 3666 3667 AATACTTATTATTACGCATCICAATATTTAAATCAAATTTTAATGGAGAAAATATTTCT 3726 3727 GGAATATGTTCAATAGGTACTTATCGTTTTAGACTTGGAGGTGATTGGTATAGACACAAT 3786 1273 TACTTGGTTCCAACTGTCAAGGGGGGTAACTAGGCTCCTTGCTGGAGTOCACTTCCACC 1332 3787 TATTIGGIGCCIACIGIGAAGCAAGGAAATTATGCITCATTATAGAATCAACAICAACT 3845 3307 GGAAATGATTIAAGATATAATAAGANTATTATATGGTTAATATAGATTATTAAATAGA 3366 853 TACATGIACGCCAACTCCAGACAGATCGTCTTCAACACCAGACGTAACAACAACGACTTC 912 913 AACGAGGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACACCAGGGTC 1033 ATGAAGAACGAGGACGATGTACGCCGACAACCACTCCACGAGGACATCTACGCCATCGGT 1153 AACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAAGGGTGAGAACATCTCC TITLE OF INVENTION: Multivalent Vaccine For Clostridium WEDIUM TYPE: Flogy disk COMPUTED: TIMP Composition COMPUTED: TIMP Composition COMPUTED SYSTEM PC-TOS/NS-TOG SOFTWARE PERCENT Release FI.O. Version #1.30 CURRENT APPLICATION PART. CORRESPONDENCE ANDRESS: ADDRESSEE: Medlen & Carroll STREET: 220 Montgomery Street, Suite 2200 Botulinum Neurotoxin REFERENCE/DOCKET NUMBER: OPHD-02304 CITY: San Francisco STATE: California COUNTRY: United States of America APPLICATION NUMBER: US/08/704,159 FILING DATE: «UNKNOWN» ATTORNEY/AGENT INFORMATION: APPLICATION NUMBER: US/10/271,012 FILING DATE: 15-0ct-2002 1333 CACTOGGGATTCGTCCCAGTCTCCGAGTAA 1362 3847 CATTGGGGTTTTGTACCTGTAAGTGAATAA 3876 NAME: Ingolia, Diane E. REGISTRATION NUMBER: 40,027 CLASSIFICATION: <Unknown> TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 705-8410 Sequence 59, Application US/10271012 GENERAL INFORMATION: APPLICANT: Williams, James A. halley, Bruce S. NUMBER OF SEQUENCES: 82 PRIOR APPLICATION DATA: COMPUTER READABLE FORM: ZIP: 94104 1213 RESULT 7 ò 8 ò 8 ò ð a ð ð 용 음 à 용 ò ö 187 TCTGATAACATCAATATGTGGATAAGAGATTTTTTATATATGCTAAGAATTAGATGGT 3246 2707 CCAATATTTCATTTGACTTTAAATTAGGTAGTTCAGGGGAGGATAGAGGTAAAGTTATA 2766 2887 aaaaataactcaggitggagiataggiatatatiagtaaittitatagiatitkottiaaaa 2946 2947 CAAAATGAAGATAGTGAACAAAGTATAAAATTTTAGTTATGATATATCAAATAATGCTCCT 3006 007 GGRIACAARRAATGGITTTTTGTAACTGTTACTAACAATATGAAGGAARTATGAAGATT 3066 8247 AAAGATATTAATTATTATTAATAGCTTGCAATATATACTAATGTTGTAAAAGATTATTGG 3306 133 IIIGICGACACCTCCGGITACAACGCCGAGGICTCCCGAGGAGGAGGIGACGICCAGCTGAAC 192 253 GTCACCCAGAACGAGAACAICGTCTACAACTCCATGTACGAGTCCTTCTCCATCTCCTTC 312 313 TGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTCGGTC 372 373 AAGAACAACTCOGGIIGGICCATCGGIAICAICITCCAACTICCTGGICTTCACCCTGAAG 432 433 CAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACAACGCTCCT 492 493 GGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATC 552 553 TACATCAACGGTAAGCTGATCGACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTC 612 613 TOCAAGAOCATCACCTTCGAGATCAACAAGATCCCAGACACCGGTCTGATCACCTCCGAC 672 673 TCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTGGCCAAGGAGTTGGACGGT 732 733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTGG 792 793 GGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGA 852 73 GAGTACTICAACAACAICAAGGGCICCAAGAICCIGIGCGGAACGGGIAAGAACACC 132 0; Gaps 13 ACCATCOCATTCAACATCTTCTCTACACAACAACTCCCTGTTGAAGGACATCAAC 72 2647 TTAGTGGATACATCAGGATATAATGCAGAAGTGAGTGAAGAAGGCGATGTTCAGCTTAAT CCANTCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGGGTAAGGTCATC Score 665.2; DB 42; Length 3876; Pred. No. 4.7e-130; inception (1,685)
Full Castley 48.5%; Score vo. 4.7e-130; 68.3%; Pred. No. 4.7e-130; *1ve 0; Mismatches 428; Indels DATABASE ACCESSION NUMBER: GeneBank / X72793 DATABASE ENTRY DATE: 1993-05-03 RELEVANT RESIDUES: 1 TO 3876 Best Local Similarity 68.3 Matches 922; Conservative PAGES: 631-640 VOLUME: 243 05-10-205-516-5 ery Match

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1093 CTGCGTGAGCAGACCAAGACATCAACGACAACATCATCTCCAGATCCAGCATGAAC 1152
1093 CTGCGTGAGCAAGACGATATAATATATATTTCAAATACAACCAATGAAT 3666
3607 TTAAQAAAAAAAAAATAATAATAATATATATTTCAAATACAACCAATGAAT 3666
                                                                                        8367 TATATGTGAAGTCACGAGAAATTGTTTTAATACACGTAGAAATAATAATGTG 3426
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3667 AATACTTATTATTAGGGATCICAAATATTTAAATGAAATTTTAATGGAGAAATATTTCT 3726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1213 GGTATCTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGGTGGTGGTACAGACACACAAC 1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1273 TACTIGGTTCCAACTGICAAGCAGGTAACTACGCCTCCTIGCTGGAGTCCACTTCCACC 1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3787 TATTIGGIGCCIACIGIGAAGCAAGGAAATTATGCTTCATTAGAATCAACAACAACA 3846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT Lacce Simpson, Wikita Kiyatkin, APPLICANT Andrew Mekapungan Applicant Andrew Mekapungan Applicant Applican
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3547 AIGAAGAAIGAAACIAIGIAIGCAGAIAATCAIAGIACIGAAGAIAIAIAIGCIAIAGGI 3606
                                   853 TACATGTACGCCAACTCCAGACAGATCGTCTTCAACACCAGACGTAACAACAAGACGTTC 912
                                                                                                                                                                                         AACGAGGGTTACAAGATCATCATCAAGGGTATCAGAGGTAACACAAGGACACCAGAGTC 972
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MEDIUM TYPE: DISKETTE, 3.5 INCH, 1.44 MD STORAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WINDOWS FOR WORKGROUPS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1333 CACTGGGGATTCGTCCCAGTCTCCGAGTAA 1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3847 CATTGGGGTTTTGTACCTGTAAGTGAATAA 3876
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JEFF-0164
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SOFWARE: WORDPERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/954,302
FILING DATE: herewith
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RETERENCE/DOCKET NUMBER: 32,257
RETERENCE/DOCKET NUMBER: JEF
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (609) 779-2400
(609) 810-1454
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NAME: Jane Massey Licata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IBM 486
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2527 ACARTACCCTTRATATTTTTCATATACTAATAATTCTTTATTAAAAGATATAATAAT 2586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8647 TTAGTGGATACATCAGGATATACAGAAGTGAAGTGAAGGAGAGGGGATGTTAAT 2706
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2827 IGGATIAGAATAAATAAGGGTAAGTAATITACCIGGAIATACIATAATIGATAGIGIT 2886
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     793 GGTAACGAGCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGA 852
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGTCGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCCAGCTGAAC 192
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253 GTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCCATCTCCTTC 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  313 TGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTCCGTC 372
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         433 CAGAACGAGCACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACAAGGCTCCT 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        553 TACATCAACGGTAAGCTGATCGACCATCAAGGTCAAGGAGTTGACCGGTATCAACTTC 612
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 43; Length 3876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nesty Match
48.5%; Score 665.2; DB 43; Length
best Local Similarity 68.3%; Pred No. 4.79-130;
fatches 922; Conservative 0; Mismatches 428; Indels
fatches 922; Conservative 0; Mismatches 428; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE DESCRIPTION: SEQ ID NO: 59:
US-10-271-012-59
                          INFORMATION FOR SEQ ID NO: 59:
SEQUENCE CHARACTERISTICS:
LENGTH: 3876 base pairs
TYPE: nucleic ace pairs
STRANDEDNESS: double
TELEFAX: (415) 397-8338
                                                                                                                                                                                                                                                                         MOLECULE TYPE: DRA (qenomic)
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Conject from: 10910 186

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APPLICANT: Shong, Jun
TITLE OF INVENTION: Aethod For Producing Biologically Active Botuliaum
TITLE OF INVENTION: Aeurocoxins Through Recombinant DNA Technique
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                                                                                                                                           518 CGAGGAGAGATATTTTATATTTTGATATGACAATTAATAACAAAGCATATAATTTGTTT 3577
                                                                                                                                                                                                1092
                                                                                                                                                                                                                                1093 CTGCGTGAGCAGACCAAGGACATCAACGACAACATCATCTTCCAGATCCAGGCAATGAAC 1152
                                                                                                                                                                                                                                                                                                                                 3638 TIAAGAGAACAAGGAFAFAAAFGATAAFTTAFKTTTGAAATACAACGAATGAAT 3697
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1273 INCTTGGTTCCAACTGTCAAGCAGGGTAACTACGCCTCCTTGCTGGAGTCCACTTCCACC 1332
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913 AACGAGGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACACCAGAGTC
                                973 AGAGGIGGIGACAICCIGIACIICGACAIGACIAICAACAACAAGGCCIACAACCIGIIC
                                                                                                                                                                                                      1033 AIGAAGAACGAGACCAIGIACGCGACAACCACCACCGAGGACAICIACGCCAICGGI
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Local Similarity 68.4%; Pred No. 11.2e.129;
Local Sinj; Conservative 0; Mismatches 423; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1333 CACTGGGGATTCGTCCCAGTCTCGGAGTAA 1362
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CURRENT APPLICATION WIMBER: US/10/205,516
CURRENT FILING DATE: 2002-07-25
NUMBER OF SEQ ID NOS: 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_signal

) LOCATION: (3886)...(3903)

) OTHER INFORMATION: 6-histidine tag

(95-10-205-516-19
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GENERAL INFORMATION:
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OTHER INFORMATION: factor Xa site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: DNA
ORGANISM: Clostridium botulinum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Ver. 2.1
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LOCATION: (1)...(3906)
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LOCATION: (1347)..(13
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                                                                                                                                                                                                                           Score 665.2; DB 13; Length 3950;
Pred. No. 4.7e-130;
0; Mismatches 428; Indels 0;
                                                                                                                                                                                                                           Ouery Match 48.5%;
Best Local Similarity 68.3%;
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 3950
                                                                                                                                                                                                                                                                                 Matches 922; Conservative
                                                                     NUCLEIC ACID
                                                                                                                                LINEAR
                                                                                                           STRANDEDNESS:
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US-08-954-302-2
                                                                                                                                TOPOLOGY:
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1213 GGTATCTGTTCCATCGGTACCTACAGATTCCGTCTGGGTGGTGACTGGTACAGACACAAC 1272

2933 Similarity FILE REFERENCE: LENGTH: 3876 RESULT 10 US-09-730-237-4 SOPTWARE: Query Match 313 œ à g à 8 ò a à a ò 90 à 8 ă 용 à 8 à 음 973 AGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAAGAAGGCCTACAACCTGTTC 1032 3679 AATACTTATTATTACCATCTCAAATTTAAATCAAATTTAAATGGAGAAAATATTCT 3738 2899 AAAATAACTCAGGTIGGAGTATAGGTATTAGTAATTTTTTAGTATTTACTTTAAAA 2958 CANANTGARGATAGTGARCALAGTATALATTTTAGTTATGATATATGARATAATGCTCCT 3018 019 GGATACAATAAATGGTTTTTTGTAACTGTTACTAACAATATGATGGGAAATATGAAGATT 3078 3139 AGCABARCTATARACATTTGARATARARATTCCAGRIACCGGTTTGATTACTTCAGAT 3198 TCTGATAACAICAATATGTGGATAAGAGATTTTTATATATATTTGCTAAAGAATTAGATGGT 3258 TATATGTATGCGAACTCACGACAATTGTTTTAATACACGTAGAAATAATAATGACTTC 3438 3439 AAIGAAGGATARAAATTARAAAAGAATCAGAGGAAATACAAAGGATACTAGAGTA 3498 9499 CGAGGAGGAGTATTTTATATTTTGATATGACATTAATAACAAAGGATATAATTAGTTT 3558 1033 ATGNAGNACGAGACCATGTACGCCGACAACCACTCCACCGAGGACATCTACGCCATCGGT 1092 1153 AACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACTTCAACGTGAGAACATCTCC 1212 2659 TTAGTGGATACATCAGGATATAAATGCAGAAGTGAGTGAAGAAGGCGATGTTCAGCTTAAT 2718 2839 TGGATTAGAATAAATAATGGGTAAGTAATTTACCTGGATATACTATAATTGATAGTGT 2898 AAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCCAGTTCCTGGTCTTCACCTGAAG 432 CAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACGCTCCT 492 TCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGT 732 733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACCAACGTCGTCAAGGACTACTGG 792 TACATGTACGCCAACTGCAGACAGATCGTCTTCAACAGCCAGACGAACAAGACTTC 912 913 AACGAGGGTIACAAGATCATCATCAAGGGTATCAGAGGTAACACCAAGGACACCAGAGTC 972 133 FIGGICGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGGTGACGTCCAGCTGAAC 192 CCAATCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATC 252 253 GTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCCATCTCCTTC 312 313 TGGAFCAGAATCAACAAGFGGGFCTCCAACTFGCCAGGTTACACCATCATCGACTCGGTC 372 GGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATC 552 TACATCAACGGTAAGCTGATCGACACCATCAAGGTGAAGGAGTTGACCGGTATCAACTTC 612 TCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACCGGTCTGATCACCTCCGAC 672 GGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGA 852 613 8779 433 2959 493 673 793 3319 853 3379 3199 Copied from a 094 0:1 865 on 056-058 20048 급 ô 8 á 윰 ŝ g ö QQ ð 8 8 ò

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                                                                           1273 TACTIGGTICCAACTGICAAGGAGGINACTACGCCTCCTIGCTGGAGTCCACTTCCACC 1332
                                                                                                                                3799 TATTIGGIGGCIACTGIGAAGCAAAATTATGCTICATTATTAGAATCAACAICAACT
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68.1%; Pred. No. 2.2e-129;
tive 0; Mismatches 430; Indels
                                                                                                                                                                                                                                                                                                                                                                              Sequence 4, Application US/09730237
GENERAL INFORMATION:
APPLICANT: Walter: Patricis
TITLE OF INVENTION: Methods of Treating Hyperhidrosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/730,237
CURRENT FILLING DATE: 2000-12-05
NUMBER OF SEQ ID NOS: 12
                                                                                                                                                                                          1333 CACTGGGGATTCGTCCCAGT 1352
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, ORGANISM: botulinum toxin
US-09-730-237-4
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48.3%; Score 662; DB 39; Length 3876;
68.1%; Pred. No. 2.2e-129;
                                  Indels
                                      0; Mismatches 430;
                                      Conservative
                   Best Local Similarity
                                      Matches 920;
   Query Match
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                                          1127 AGCRARACTATRACATTTGRARATARATACATTCCAGATACGGTTTGACTTTCAGAT 3186
                                                                                                                               TCTGATAACATCAATATGTGGATAAGAGATTTTTATATATTTGCTAAAGAATTAGATGGT 3246
                                                                                                                                                                                     GGAANTGATTTRAGATATAARAAGAATATTATATGGTTAATATAGATTATTAAATAGA 3366
                                                                                                                                                                                                                                                                                                                               973 AGAGGIGGIGGIGACATCCTGTACTTCGACATGACTATCAACAAGGCCTACAACCTGTTC 1032
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                                                                                                                                                             733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTGG 792
                                                                                                                                                                                                                                       GGTAACGACCTGAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGA 852
                                                                                                                                                                                                                                                                                                                                                                                 AAGGAGGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACACCAGAGTC 972
                   613 TOCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGTCTGATCACCTCCGAC 672
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                                                                                                                                                                                                                                                                                                            TACATGTACGCCAACTCCAGACAGATCGTCTTCAACACCGGGAACAACAACAACGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1033 ATGAAGAACGAGGATGTACGCGGACAACCACTCCACCGAGGACATCTACGCCATCGGT
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                                                                                        TCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGT
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US-10-051-952-4
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CCARTATTCCATTGGTTAAATTAGGTAGTTCAGGGGAGGATAGAGGTAAAGTTATA 2766 2947 CRABATGRAGRIAGIGARCAAAGIRIAAATTITAGITATGRIRATGICAARIAAIGGICCI 3006 3007 GGATAGAATAAATGGTTTTTTGTAACTGTTACTAACAATATGATGGGAAATATGAAGATT 3066 067 TATATAAATGGAAAATTAATAGATACTATAAAGTTAAAGAACTAAACTGGAAITAATTTT 3126 127 AGCABARCTATARCATITICAAATAAATITCCAGATACCGGITTGATTACTICAGAT 3186 187 TOTGATAACATCAATATGTGGATAAGAGATTTTTATATATTTGCTAAAGAATTAGATGGT 3246 367 TATATGTATGCGNACTCACGACAAATTGTTTTTAATACACGTAGAAATAATAATGACTTC 3426 973 AGAGGIGGIGACATCCIGTACTICGACAIGACIAICAACAAGAACAAGGCCIACAACCIGIIC 1032 2527 ACANTACCUTINATATITITICATATACTAATATICITITATAAAGAIATAATTAAT 2586 2767 GTAACCCAGAATGAAATATTGTATATAATTCTATGTATGAAAGTTTTAGCATTAGTTTT 2826 492 612 732 852 913 AACGAGGGTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACACCAGAGTC 972 GAGTACTTCAACAACATGAACGAGTGGAAGATGCTGTCCCTGCAGAACGCTAAGAACACC 132 133 TTOGTOGACACCTCCGGTTACAACGCCGAGGTCTCCGAGGAGGAGGTGACGTCCAGCTGAAC 192 193 CCARTCTTCCCATTCGACTTCAAGCTGGGTTCCTCCGGTGAGGACAGAGGTAAGGTCATC 252 313 TOGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCAGCTCCGTC 372 432 493 GGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGATC 552 Gaps 13 ACCATCCCATTCAACATCTTCTCCTACACAACAACACTCCTGTTGAAGGACATCATCAAC 72 1487 CGAGGAGGAGATATTTTATATTTTGATATGACAATTAATAACAAAGCATATAATTTGTTT 2827 TGGATTAGAATAAATAGGTAAGTAATTTACCTGGATATACTATAATTGATAGTGTT 373 AAGAACAACTCCGGTTGGTCCATCGGTATCATGTCCAAGTTCCTGGTCTTCACCCTGAAG 553 TACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACGGGTATCAACTTC 613 TCCNAGACCATCACCTTCGAGATCAACAAGATCCCGAGACCAGGCCTGGATCACCTCCGAC TCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGT 733 AAGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTGG GGTAACGACCTGAGATACAACGAGGAGTACTACATGGTCAACATCGACTACTTGAACAGA 853 TACATGTACGCCAACTCCAGACAGATCGTCTTCAACAGCGTAGGACGTAACAACAACTTC 433 CAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACGCTCCT ö 427 유 ò 용 à B à g

1033 ATGAAGAACGAGACCATGTACGCCGACAACCACTCCACGAGGACATCTACGCCATCGT 1092

APPLICANT: Walker, Patricia a TITLE OF INVENTION: Methods of Administering Botulinum Toxin

THE REPRESENCE: 1931CH CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR WORKER: US/A/O/31/52 CHICAGO MACHINE FILLING ADMINISTRY ON THE THE WASHER: US/A/O/31/31 CHICAGO MACHINE THE WASHER: US/A/O/31/31 SOFTRACTOR WORKER: US/A/O/31/31 SOFTRACTOR CONTRACTOR CON

7 ORGANISM: botulinum toxin US-10-051-952-4

DNA

Page 12

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3666
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3667 ANTACTIATIATIAGGCATCTCAAATATTTAAATCAAATTTTAATGGAGAAAATATTTCT 3726
                                                                                                                                                  1213 GGTATCTGTTCCATCGGTACCTACAAATTCCGTCTGGGTGGTGACTGGTACAGACACAAC 1272
                                                                                                                                                                             3727 GGASTAIGTICAATAGGTACTTATGGTTTTAGACTTGGAGGTGATTGGTATAGACACAAT 3786
                                                                                                                                                                                                       1273 IACTIGGTTCCAACTGTCAAGCAGGTAACTACGCCTCCTTGCTGGAGTCCACTTCCACC 1332
                                                                                                                                                                                                                         3787 TATTTEGGTGCCTACTGTGAAGCAAGGAATTATATCATTATTAGAATCAACATGAACT 3846
                                      1093 CTGCGTGAGCAGACCAAGGACATCAACGACAACATCATCTTCCAGATCCAGCAATGAAC
                                                        9607 TTARGAGARACAAAGGATATAAATGATAATATTATATTTTCAAATACAATGAAT
                                                                                               1153 AACACTTACTACTACGCTTCCCAGATCTTCAAGTCCAACGTCAACGGTGAGAACATCTCC
                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT THILSE, Lames A. APPLICANT THILES, Lames A. APPLICANT THILES, Lawren S. TITLE OF INTENTIONS MILITARIAN VECTOR VECTOR TITLE OF INVENTIONS DOLLINUM Neurotoxin TITLE OF INVENTIONS DOLLINUM Neurotoxin CONRESPONDENCE S. 82
CONRESPONDENCE ADDRESS: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 220 Montgomery Street, Suite 2200
San Francisco
                                                                                                                                                                                                                                                             CACTGGGGATTCGTCCCAGTCTCCGAGTAA 1362
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                                                                                                                                                                                                    OPRD-02304
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Ingolia, Diane B. RESISTRATION NUMBER: 40,027 REFERENCE/COCKET WUMBER: OPH TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear
MOLECULE TYPE: DNA (genomic)
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INFORMATION FOR SEQ ID NO: 6
SEQUENCE CHARACTERISTICS:
LENGTH: 1502 base pairs
TYPE: nucleic acid
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941 GIATCAGAGGIAACACCAACGACACAGAGICAGAGGIGGIGACAICCIGIACITCGACA 1000 1001 IGACTATCAACAACAAGGCCTACAACCTGTTCATGAAGAACGAGACCATGTACGCGGACA 1060 1061 ACCACTCCACCGAGGACATCTACGCCATCGGTCTGCGTGAGCAGCCAAGGACATCAACG 1120 1121 ACAACATCATCTTCCAGATCCAGCCAATGAACAACACTTACTACTACGCTTCCCAGATCT 1180 1195 ATCATAGTACTGAAGATATATATGCTATAGGTTTAAGAGAACAACAAGGATATAAATG 1254 761 TGCAGTACACCAACGTCGTCAAGGACTACTGGGGTAACGACCTGAGATACAACAAGAGT 820 955 ATTATATGGTTAATATAGATTATTTAAATAGATATATGTATGCGAACTCACGACAAATTG 1014 AGGICICOSAGGAGGGIGACGICOAGOIGAACOCAAICTICCCATICGACTICAAGCIGG 220 295 NACTGAGTGAAGAGGGGATGTTCAGCTTAATCCAATATTTCCATTTGACTTTAAATTAG 354 GIAGITCAGGGGAGGAIAGAGGIAAAGITATAGIAACCCAGAATGAAAAIAITGIATATA 414 ACTECATISTACGAGICCTICTCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCA 340 ACTIGCCAGGITACACCATCATCGACTCCGTCAAGAACAACACCGGTTGGTCCATCGGTA 400 TCATCTCCAACTTCCTGGTCTTCACGCTGAAGGAACGAGGACTCCGAGCAGTCCATCA 460 535 ITATTAGTARTITITAGTATTTACTTTARARCAAATGAAATGAAGTAGTGAAGTATAA 594 461 ACTICTCCTACGACATCTCCAACAACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCG 520 595 ATTITAGTTATGATATATCAAATAATGCTCCTGGATACAATAAATGGTTTTTTGTAACTG 654 555 TTACTAACAATAIGAIGGGAAATAIGAAGATITAATAAATGGAAAATTAATAGATACTA 714 TCAAGGICAAGGAGTIGACCGGIATCAACTICTCCAAGACCATCACCTTCGAGATCAACA 640 200 775 AANITCCAGAIACCGGITIGAITACTICAGAIICTGAIAACAICAATATGIGGAIAAGAG 834 TCTTCAACACCAGACGIAACAACAACGACTTCAACGAGGGTTACAAGATCATCATCAAGC 940 175 CTAGCATGGCTTTATTAAAAGATATAATTAATGAATATTCAATAATATTAATGATTCAA 234 101 AGAICCTGTCCTGCAGAACCGTAAGAACACCTIGGTCGACACCTCCGGTTACAACGCCG 160 GITCCICCGGIGAGGACAGAGGIAAGGICAICGICACCAGAACGAGAACATCGICIACA 280 475 ATTIACCIGGATATACTATAATTGATAGTGTTAAAAATAACTCAGGTTGGAGTATAGGTA 534 TCACCAACAACATGATGGGTAACATGAAGATCTACATCAACGGTAAGCTGATCGACACA 641 AGATCCCAGACACGGTCTGATCACCTCCGACTCCGACAACATCAACATGCGATCCGTG 701 ACTICTACATCTTGGGCAAGGAGTTGGACGGTAAGGACATGAACATCTGTTCAACTCCT 881 161 221 355 281 341 521 581 8 g g e à 9 à QQ. á 8 à a 셤 à 윱 ö a à q à QQ. à 8 à 8 à à à ð

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Gaps

DB 1; Length 1502; 8-127; Indels 0; 41 CCAACAACTCCCTGTTGAAGGACATCAACGAGTACTTCAACAACATCAACGACTCCA 100

Query Match 47.4%; Score 649.8; DB 1; Best Local Similarity 68.2%; Pred, No. 7.1s-127; Matches 903; Conservative 0; Mismatches 422;

; LOCATION: PCT-US97-15394-61

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1001 TGACTATCAACAACAAGGCCTACAAGCTGTTCATGAAGAAAGGAGCCATGTACGCCGACA 1060
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                                                                                                                                                                                                                                                                                                                355 GTAGTICAGGGGAGGATAGAGGTAAAGTTATAGTAACCCAGAATGAAATATIGTATATA 414
                                                                                                                                                                                                                                                                                                                                                                                                  281 ACTCCATGTACGAGTCCTTCTCCATCTCTGGATCAGAATCACAAGTGGGTCTCCA 340
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                                                                                  161 AGGICTCCGAGGAGGGTGACGICCAGCIGAACCCAAICTICCCATTCGACTTCAAGCTGG
                                                                                                                                                            295 AAGTGAGTGAAGAAGGCGATGTTCAGCTTAATCCAATATTCCATTTGACTTTAAATTAG
                                                                                                                                                                                                                                      GTTCCTCCGGTGAGGACAGAGGTAAGGTCATCGTCACCCAGAACGAGAACATCGTCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                           TCATCTCCAACTTCCTGGTCTTCACCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCA
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1255 ATAATATATATATACAAATACAACCAATGAATAATACTTATTACGCATCTCAAATAT 1314
                                                                                                                   1435 ATTAIGCTTCATTAITAGAATCAACAICAACTCATTGGGGTTTTGTACCTGTAAGTGAAT 1494
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT THILLSEN, JAMES A, APPLICANT THILLSEN, JAMES A, APPLICANT THILLY SHOWS AND THILLY SHOWS THILLY SHOWS THILLY SHOWN SHOWS OF SUPERIORS DESCRIPTIONS DECLINED FOR CORRESPONDENCE AND RESERVED BY CORRESPONDENCE AND RESS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Version #1.30
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STREET: 220 Montgomery Street, Suite 2200
CITY: San Francisco
STATE: California
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 61, Application US/08704159
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY, GABEN THEOMATION:
REGISTRATION WHERER: 40,000
REFERENCE/CAST WINDER: 000
REFERENCE/CAST WIND
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: DNA (genomic)
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TYPE: nucleic acid
STRANDEDNESS: double
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LOCATION: 108..1493
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SULT 13
-08-704-159-61
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COUNTRY:
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1241 TCCGTCTGGGTGGTGACTGGTACAGACACAACTACTTGGTTCCAACTGTCAAGGAGGGTA 1300
             1375 TRAGACTIGGRAGTGATIGGTATAGACACAATTATTIGGTGCTACTGTGAAGGAAGGAA
                                               1301 ACTACGCCTOCTTGCTGGAGTCCACTTCCACCCACTGGGGATTCGTCCCAGTCTCCGAGT 1360
                                                          1435 ATTATECTICATIATTAGAATCAACATCAACTCATTGGGGTTTTGTACCTGTAAGTGAAT 1494
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match: 47.4%; Score 649.8; Ds 43; Length 1502; Bset Local Similarity 68.2%; Pred. No. 7.16-127; Indels Matches 93; Conservative 0; Mismatches 423; Indels 0;
                                                                                                                                                                                                                        Thalley, Bruce S.
TILLE OF INVENTION: Multivalent Vaccine For Clostridium
                                                                                                                                                                                                                                                                                                                                                                                                           Version #1.30
                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: Medlen 6 Carroll
STREET: 220 Montgomery Street, Suite 2200
                                                                                                                                                                                                                                             Botulinum Neurotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Ingolia, Diane E.
REGISTRATION NUMBER: 40,027
REFERENCE/DOCKET NUMBER: OPHD-02304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/704,159
FILING DATE: GUNROWN>
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: United States of America
                                                                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
CONFUTER: IBM PC COMPATIBLE
COPERATING SYSTEM: PC-DDS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 705-8410
TELEFAX: (415) 397-8338
                                                                                                                                                                   10.271-012-61
equence 61, Application US/10271012
GENERAL INFORMATION:
                                                                                                                                                                                                        APPLICANT: Williams, James A.
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LENGWI-1502 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
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MOLECULE TYPE: DNA (genomic)
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                                                                                                                                                                                                                                                                                                         CITY: San Francisco
STATE: California
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                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 82
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                                                                                                                                                                                                                                                                                                                                              SIP: 94104
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                                                                                              1361 AATAG 1365
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941 STAICAGAGGTAACAACCAACGACAAGTCAGAGTGGTGAGACATCCTGTACTTCGACA 1000
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AGGICTCCGAGGAGGGTGACGTCCAGCTGAACCCAATCTTCCCATTCGACTTCAAGCTGG 220
                                        381 ACTOCATGIAGGAGICCITCICCATCICCTITCIGGAICAGAAICAACAAGIGGGICICCA 340
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                                                                                                                                        GTTCCTCCGGTGAGGACAGAGGTAAGGTCACCCAGAACCAGAACATCGTCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          341 ACTTGCCAGGTFACACCATCATCGACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTA
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958 AACGACACCAGAGTCAGAGGTGGTGACATCCTGTACTTCGACATGACTATCAACAAGAG 1017
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220 CAGTIGAACACCATCTACACCAACGACTTCAAGTIGICCTCTTCCGGTGA-----C 270
                                                                                                                                                     481 AACAACGCTCCTGGTTA---CAACAAGTGGTTCTTGGTCACGGTCACGAACAAGATG 537
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      571 GGTTACATGAAGTIGTACATCAACGGTGAGTIGAAGCAGTCCCAGAAGATCGAGGACCTG 630
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US-10-240-425-1585
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PRIOR FILING DATE: 2000-03-31
NUMBER OF SEQ ID NOS: 1598
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GENERAL INFORMATION:
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Best Local Similarity 46.4%;
Matches 391; Conservative 0
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SEQ ID NO 1585
LENGTH: 135259
TYPE: DNA
ORGANISM: Homo sapiens
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Copyright (c) 1993 - 2002 Compugen Ltd.
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DEPENDENT MELLOR MANAMAN MANA
                                                                              69646 CACCACGATCACCAA------CGTCACCACCACCACCACCACGGGGATCAGCACCAT 69696
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489 TCCFGGTFACAACAAGTGGTFCTFCGTCACCGTCACCAACAACAAGAGGGTBACATGAA 548
                                                                                                                                              549 GATCHACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAA 608
                                                                                                                                                                                                                                                                                            609 CTTCTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGTCTGATCACCTC 668
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CURRENT FILING DATE: 2000-04-13
NUMBER OF SEQ ID NOS: 19
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ORGANISM: Chrysosporium lucknowense
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                                                                                                                                                                                                                                                                                                                                                                                                                                               364 GACTCCGTCAAGAACAACTCCGGGTTGGTCCATCGGTATCATCTCCCAACTTCCTGGTCTTC 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  424 ACCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAAC 483
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                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                                                                            Length 3028;
                                                                                                                                                                                            Owery Match 4.2%; Score 58.2; DB 5; Length 30 dest Local Similarity 44.3%; Pred. No. 4.4e-06; Index Matches 293; Conservative 0; Manatches 358; Index Matches 293; Conservative 0; Manatches 358; Index
: OTHER INFORMATION: a, t, c, g, other or unknown
US-09-548-938A-2
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Length 2835;

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Query Watch
3.7%; Score 50.6; DB 6; Length 283
Best Local Shilarity 41.8%; Pred. No. 0.0004.
Matches 378; Conservative 0: Mismatches 524; Indels
Matches 378; Conservative 0: Mismatches 524; Indels
     7 ORGANISM: Staphylococcus epidermidis
US-10-092-411A-1515
TYPE: DNA
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                                                                   286 AIGTACGAGTOCTTCTCCAICTCCTTCTGGAICAGAATCAACAAGTGGGTCTCCAACTIG 345
                                                                                                                         346 CCAGGITACACCAICATCGACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTATCAIC 405
                                                                                                                                                                                                                                                   2594 GAGTAANAGTACGTCATTAAGTGAATCGACAAGCACAAGCGTTTCAGAATTCAGCAAGCGT 2535
                                                                                                                                                                                                                                                                                                                       406 TCCAACTTCCTGGTCTTCACCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTC 465
                                                                                                                                                                                                                                                                                                                                                                                                                                         466 TCCTACGACATCTCCGAACAACGCTCCTGGTTACAACGAGGGTTCTTCGTCACCGTCACC 525
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GREAT INFORMATION TO STANDARD 2910 CAGTARANGTACGTCATTAAGTGAATCGACAAGTACGAGTCTTTCAGGCTCAAGGAGTGC 2851 946 AGAGGTAACACCAACGACAGAGTCAGAGGTGACACATCCTGTACTTGGACATGACT 1005 3450 ATCAGGAGTACGTCGACATCTGATAGTGCATCAGAGGAGGAGAAGAAGAAGAGTCAAC 3391 3390 GAGTAAAAGTAGGTGATTAAGTGAATGGAGAAGCACAAGGGGTTTCAGATTCAGCAAGCGT 3331 406 TCCAACTTCCTGGTCTTCACCCTGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTTC 465 3330 GICAAGGICAGAAAGIGCGICAACAICAACAAGIGIGAGIGGCICAACAAGIACAAGCAI 3271 466 TCCTACGACATCTCCAACAACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCGTCACC 525 3270 TTCAGACTCAAGGAGGAGGAGGAGGGGTGGATGAGGATCAATAAAAGGGGAATGAGG 3211 526 AACAACAIGAIGGGTAACAIGAAGAICIACAIGAAGGTAAGCIGAICGACACCAICAAG 585 3210 AAGCACAAGTAAACTATTATCAGAATCAGTGAGTACGTCGAGGTCTGATAGGGCATCAAC 3151 1150 GTCAACGAGCGTAAGTGACTCCAATAGCGCAAGTACGTCATTAAGTAAATCGACAAGGGCAC 3091 646 CCAGACACOGGICIGAICACCICCACICCGACAACAICAACAIGIGGATCCGIGACITC 705 3090 AAGCGTTTCAGATTCAACAAGTACATCGACATCCGACAGTGCGTCCACATCAACGAGTGA 3031 706 TACATCTTCGCCAAGGAGTTGGACGGTAAGGACATCAACATCCTGTTCAACTCCTTGCAG 765 1030 GAGTGAGTCAGACAGTGCAAGTACGTCATTAAGTGAATCGACAAGTACAAGCGTTTCAGA 2971 766 TACACCAACGTCGTCAAGGACTACTGGGGTAACGACCTGAGATACAACAAGGAGTACTAC 825 886 AACACCAGACGIAACAACAACGACTICAACGAGGGIIAGAAGATCAICAICAAGGIAIC 945 286 ATGTACGAGTCCTTCTCCATCTCCTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTG 345 346 CCASGTTACACCATCATCGACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTATCATC 405 Gaps 586 GICAAGGAGIIGACCGGIAICAACIICICCAAGACCAICACCIICGAGAICAACAAGAIC Query Match
3.74; Score 50.6; DB 6; Length 3551;
Matches 378; Conservative 0; Mismatches 524; Indess 3;
Matches 578; Conservative 0; Mismatches 524; Indess 3; ORGANISM: Staphylococcus epidermidis US-10-092-411A-1685 RESULT 4 US-10-092-411A-1685/c SEQ ID NO 1685 LENGTH: 3551 TYPE: DNA g ò a ò a ö a ò 8 ð 셤 à g ö 용 à g ö ò

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                                                            706 TACATCTTCGCCAAGGAGTTGGACGGTAAGGACATCAACATCCTGTTCAACTCCTTGCAG 765
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TTTLE OF INVENTION: Proteins and Nucleic Acids Encoding Same
FILE REPERMOR: 21402-279
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CURRENT FILING DATE: 2002-02-25
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PRIOR APPLICATION NUMBER: 60/271,646
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GENERAL INFORMATION:
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2790 GTCATTAAGTGAATCGACAAGTACGAGTCTITCAAGCTCAACGAGTGCGTCGACATCCGA 2731
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                                                                                                                      804 GAGATACAACAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGATACATGTACG 863
                                                                                                                                                                                 357 CCTGGTGAACCGCATCGAGGTGAAGGCATCGACTTCAACGAGGAGGGAAGACATGGTGGG 416
                                                                                                                                                                                                                                                                                                                                           864 CAACTOCAGACAGATCGTCTTCAACACCAGACGTAACAACAACGACGTTCAACGAGGGTTA 923
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Llarity 42.8%; Fred, No. 0.0013;
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CURRENT FILING DATE: 2002-03-07
PRIOR APPLICATION NUMBER: US 09/134,001
PRIOR FILING DATE: 1599-08-13
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PRIOR FILING DATE: 1997-11-08
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PRIOR FILMG DATE: 1997-08-14
NUMBER OF SEQ ID NOS: 5676
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US-10-092-411A-1670
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                                                                                                          936 CAAGCGTATCAGAGGTAACACCAACGACACCAGAGTCAGAGGTG 979
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CURRENT FILLING DATE: 2002-10-11
WUMBER OF SEQ ID NOS: 12
SOFTWARE: PatentIn version 3.1
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ORGANISM: Aeguoria Victoria and Human
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; ONGANISM: Homo sapiens
US-10-085-198-111
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LOCATION: (1)...(1452)
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                                                                                    TCTTCAACACCAGACGTAACAACGACGACTTCAACGAGGGTTACAAGATCATCATCAAGC 940
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3.4%; Score 46.8; DB 6; Length 8249;
Best Local Stmilarity 41.94, Pred. No. 0.0069;
Matches 343; Conservative 0; Mismatches 472; Indels 3; Gaps
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File REPERENCE: 600.456US1
                                                                                                                                                                                                              1031 TCATGAAGAAGGAGACCATGTACGCCGACAACCACTCC 1068
                                                                                                                                                                                                                                                                         2539 ACATGGAGTTCTTCCCCTTCCCACCACCTCC 2576
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SOFTWARE: FastSEQ for Windows Version 3.0
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GENERAL INFORMATION:
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US-10-267-255-83
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Varoglu, M
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SEQ ID NO 83
LENGTH: 2466
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CURRENT FILING DATE: 2002-10-11
NUMBER OF SEQ ID NOS: 12
SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                     COTHER INFORMATION: n is a or t or g or US-10-267-255-75
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GENERAL INFORMATION:
                                                                                                                                      ORGANISM: Streptomyces lavendulae
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             LENGTH: 18034
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1010 ACAACAAGGCCTACAACCTGTTCATGAAGAAGGAGCCATGTACGCCGACAACCACTCCA 1069
                                                                                                                                                                                                                                                                                                                                                                                         1517 ACGGCAAGGCCGACATGGCGGTCCTGTACGACATGGGTCGCACTGAGGACGGCCGCAACC 1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1577 GCACCAAGTTGTACGAGTTCACCAGCACGGCAGTTCAACAGCCGGTCAAGGTCT 1636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1637 GGGACAGCAACGACGACGTCAACAGCTGCAACTCGCCTTCAGCAAGTGACGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   697 GCGACTTCGACGCGACGCCAAGGCCGACATCGCGGTTCTGTACGACTACGCAGGGACG 1756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       710 TCTTCGCCAAGGAGTTGGACGGTAAGGACATCAACATCCTGTTCAACTCCTTGCAGTACA 769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1757 GCGACCGCAGCCGTACGGGCCTGTGGACCTTCACCAGCACCGGTGCCGCCTTCACCGGCC 1816
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               890 CCAGACGTAACAACAACGACTTCAACGAGGTTACAAGATCATCATCAAGCGTATCAGAG 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1054 GGRACTGGGACGCCGTCAAGGTAGTGGGAGGCGACTTCAACGGCGACGGCAAGAGCGACA 2113
                                                                                                                                                                                                                                                                470 ACGACATCTCCAACAACGCTCCTGGTTACAACAGTGGTTCTTGGTCACCGTCACCAACA 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  530 ACATGATGGGTAACATGAAGATCTACATCAAGGGTAAGCTGATGGACACCATCAAGGTCA 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     590 AGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAG 649
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                                                                                                                                                    3; Gaps
Query Match 3.4%; Score 46; DB 6; Length 2466; BB est Local Smilarity 43.2%; Pred. No. 0.0061; Matches 269; Conservative 0; Mismatches 350; Indels Matches 269; Conservative 0; Mismatches 350; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APRICANT Sermen D
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 75
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FRIOR APPLICATION WRORDER: PCT/USS4/11279
PRIOR FILING DATE: 1994-10-06
PRIOR FILING DATE: 1994-10-06
PRIOR FILING DATE: 1993-20-07
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PRIOR FILING DATE: 1999-03-12
PRIOR APPLICATION NUMBER: US 08/624,447
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—08-10-267-255-75

O Sequence 75, Application US/10267255

GENERAL INFORMATION:
APPLICAM: Sterman, D
APPLICAM: Mac, W
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1031 AGGCCAGCAAGCTCACCGTCGGCGACTTCAACGGCGACGGCAAGGCCGACATCGGGGTGC 1090
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                                                                                                                                                                                                                                                                                                                                                                                                         Ouery Match
3.34, Score 45.8; DB 6; Length 1092;
Best Local Similarity 47.44, Pred. No. 0.0042,
Bast Conservative 0; Wismatches 152; Indels 0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        678 CAACATCAACATGIGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGTAAGGA 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           138 CAICAACAICCIGIICAACICCIIGCAGIACACCAACGICGICAAGGACIACIGGGGIAA 797
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           918 GGGTTACAAGATCATCAAGCGTATCAGAGGTAACACACGACACC 966
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PRIOR FILING DATE: 1999-03-12 00/244.447
PRIOR FILING DATE: 1999-03-12 00/244.447
PRIOR FILING DATE: 1999-03-12 00/244.447
PRIOR PILING DATE: 1999-10-06
PRIOR FILING DATE: 1999-10-06
PRIOR PILING DATE: 1999-10-07
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SOFTWARE: PastSEQ for Windows Version 3.0
TYPE: DNA
ORGANISM: Aequoria Victoria and Human
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                                                                                                                                              NAME/REY: CDS
LOCATION: (1)..(1092)
OTHER INFORMATION:
US-10-270-223-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-267-255-82
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                                                                                                             FEATURE:
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1511 GCACCANGCTGTTCACCTTCACCGGCACGGCGACCGGTTTCAACAGCCCGGTCAAGGTGT 1570
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                                                                   1151 CCGCCAGCGGGTTCAACAGCCGGAAGCAGGTGTGGGACAGCAACAACGACCCCGTGAAGA 1210
                                                                                                                                                                                                          1211 GOTGGRACTGGGAAGCCAGCAAGCCCGTCTCGGGGGACTTCAACGGCGACGGCAAGGCC 1270
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560 ACGGTANGCTGATCGACCATCANGGTCAAGGAGTTGACCGGTATCAACTTCTCCAAGA 619
                                                                                                                                      620 CCATCACCTTCGAGATCAACAAGATCCCAGACACCGGTCTGATCACCTCCGACTCCGACA 679
                                                                                                                                                                                                                                                                             680 ACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACGGTAAGGACA 739
                                                                                                                                                                                                                                                                                                                                                                                                                            740 TCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCAAGGACTACTGGGGTAACG 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   800 ACCIGAGAIACAACAAGAGGAGIACIACAIGGICAACAIGGACIACIIGAACAGAIACAIGI 859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          860 ACGCCAACTCCAGACAGATCGTCTTCAACAGCGTAACAACAACAACAACGACTTCAACGAGG 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        920 GTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAAGGACACGAGAGTCAGAGGTG 979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1040 ACGAGACCATGTAGGCCGACAACCACTCCACCGAGGACATCTAGGCCATCGG 1091
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CURRENT FILING DATE: 2002-08-28
PRIOR APPLICATION NUMBER: 10/119,480
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Watanabe, Colin L.
Wood, William I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Goddard, Audrey
APPLICANT: Goddorski, Paul J.
APPLICANT: Grimaldi, J. Christopher
APPLICANT: Grimaldi, J. Christopher
APPLICANT: Smith, Victoria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 123, Application US/10230437
GENERAL INFORMATION:
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PRIOR FILING DATE: 1997-09-17
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PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/063549
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PRIOR APPLICATION NUMBER: 60/064103
PRIOR FILING DATE: 1997-10-31
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FILING DATE: 1997-12-17
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FILING DATE: 1998-03-20
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APPLICANT: Desnoyers, Luc
APPLICANT: Gerritsen, Mary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
US-10-230-437-123
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Copyright (c) 1991 - 2002 Compused Ltd. Copyright (c) 1991 - 2002 Compused Ltd. letc - nucletc eserch, using aw model November 7, 2002, 12:18:45; Search Liber 1949 Seconds 11352,515 Williamon Ell underserven	US-00-510-186A-9 1 galtcacqatqaccatcoctdtccqaqtaataggaat 1 galtcacqatqaccatcoctdtccqaqtaataggaat Maryltc,Wcc dacpo 10.0, Gapact 1.0	Officed subsect of this satisfying chosen parameters: 33208332 Theirm as seq leadth. (see the control of th		19 (m.) 19 (m.
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Another when the property is a first concentrated at The Another Profession 250 and 150 and 15 BH153606 906 bp DNA linear GSS 24-SEP-2001 ENTES83FF Entamoeba histolytica Sheared DNA Entamoeba histolytica Email: bjloftusëtigr.org Clones are derived from the Entamoeba histolytica HM1:IMSS sheared whole genome shotgun sequencing projects. In Genome Sequencing: A Practical Approach, eds. N. Yaudin and B. Barell, Oxford University Press, 1999)." 293 c 66 g 388 t. Biskaryora intensibilidas protessoras.

1. (Basea | 10.956) valores (ba /organism="Entamoeba histolytica" Class: shotgun High quality sequence start: 15 High quality sequence stop: 733. Location/Qualiflers 1. :906/ Qualiflers /strain-"HM1:IMSS" genomic, DNA sequence. BH153606 BH153606.1 GI:15725323 Sed primer: M13-Forward 870 CAGACAGATCGTCTTCAACA 889 621 CAACTICTCCAGCAACAACA 640 Entamoeba histolytica. Entamoeba histolytica Tel: 301 838 0208 Fax: 301 838 3543 Email: biloftuseti DNA library source DEFINITION SOURCE REFERENCE AUTHORS TITLE ACCESSION TOURNAL KEYWORDS FEATURES BH153606 COMMENT à e

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Pred. No. 7.2e-13;
0; Mismatches 373; Indels
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                                /organism-"Entamoeba histolytica"
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Clones are derived from the Entamoeba histolytica HMI: IMSS sheared
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                                                                427 CIGAAGCAGAACGAGGACTCCGAGCAGTCCATCAACTICTCCTACGACATCTCCAACAAC 486
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Loftus; B., Van Aken.S. and Fraser.C.
Determination of clone end sequences;
HM::TMSS sheared DNA labrary
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Contact: Brendan J Loftus
Department of Eukaryotic Genomics
The Institute for Genomic Research
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Clones are derived from the Entamosba histolytica HM1:IMSS sheared
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Lottes: Nonary. No Aben, S. and Freser.C.
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Department of Brikaryotto Genomics
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
Tel: 301 898 0208
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Contact: Brendan J Loftus
Department of Eukaryotic Genomics
The Institute for Genomic Research
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                  Contectivities the state of the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184 AACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCGTCACCAACAACATGATGGGTAAC 543
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45.8%; Pred. No. 1.8e-12;
tive 0; Mismatches 426; Indels 0;
/db_xref="taxon:5759"
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Matches 360; Conservative
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while genome shirting sequencing projects. In Genome
Sequencing: A Franction! Approach, eds. W. Vaudin and B.
Barell, Oxford University Press, 1899).*
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quality sequence stop: 872.
Location/Qualifiers
1. .905
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/db_xref="taxon:5759"
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                                                                                                                                                        genomic, DNA sequence.
A2550256
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genomic, DNA sequence.
A2551618
A2551618.1 GI:11176919
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Entamoeba histolytica.
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/9train=WillNSS"
/02.xre="taxon:5759"
/02.xre="taxon:5759"
/02.xre="taxon:5759" | Site_1: Branchada | The
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1. (Gazes 1 to 976), 14. Va Association.

Determination of close and sequences from Entemodes historytica metamatica of close and sequences from Entemodes historytica metamatica of close and sequences from Entemodes Contest: Exercise 2 Entemodes of Contest: Exercise 2 Entemodes of Entemode
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                         330 CGTCTTCATCATCATCTTCATCTTCTAAITCAAATCATCATCATCTTTT
                                                                                          CTTCGTCACCGTCACCACAACATGGGTAACATGAAGATCTACATCAACGGTAAGCT
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High quality sequence stop: 740.
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1. .976
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Class: shotgun
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(All Limes' - Managers 2739) And Limes' DAN' at the North-Wordship Space and Limes' Company of the North-Wordship Space
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Chamas are derived from the Entamogha histolytica BUL-IMSS sheared
NOM Library
SP Primer: MJS-Reverse
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ENTKK47TR Entamoeba histolytica Sheared DNA Entamoeba histolytica
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- Tokase 1 (1
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Tel: 301 838 0208
Pax: 301 838 3543
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Lottus, 3, Wan Awen, S. and Fraser, C.
Lottus, S., Wan Awen, S. and Fraser, C.
Entantiation of clone end sequences from Entampeba histolytica BM1: IMSS, sheared DNA library
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46.5%; Pred. No. 1.3e-11;
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7841: 911 888 0208
7828: 301 888 343
2831: bjioftus@tigr.org
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                                                                Sukaryota; Entamoebidae; Entamoeba.
                                                                                                                                                                                                                                                                                                                                                            Unpublished (2000)
Confact: Bendan J Loftus
Department of Eukaryotic Genomics
The Institute for Genomic Research
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Class: shotgun
Entamoeba histolytica
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     330 GTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTCCGTCAAGAACAACTCCGGTTG 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         390 GTCCATCGGTATCATCTCCAACTTCCTGGTCTTCACCTGAAGGAGAACGAGGACTCCGA 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      150 GCAGTCCATCAACTTCTCTACGACATCTCCAACAACGCTCCTGGTTACAACAAGTGGTT 509
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High quality sequence stop: 796.
Location/Qualiflers
1. 849
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/db_xref="taxon:5759"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                946 AGAGGTAACACCAACGACACCAGAGTCAGAGTGGTGACATGCTGTACTTCGACATGACT 1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1006 ATCAACAAGGCCTACAACCTGTTCATGAAGAGGAGACCATGTACGCCGACAACCAC 1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         576 GTCTTCATCGTCGTCTTCATCATCTTCTTCATCGTCTTCATCATCATCATCTTCATC 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TICAAATTCATCATCATCTTCATCATCGTCTTCTTCATCGTCTTCTTC 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289 TACGAGICCTTCTCCCATCTCCTCTTGATCAGAATCAACAAGTGGGTCTCCAACTTGCCA 348
                                                                                                                                                                                                                                                                                                                                            796 TAARCGIACTFCFTCATCGICTTTATCCATCGICTTCAATCGICATCTTCATTGICT 737
                                                                                                                                                                                                                                                                                                                                                                                                                                       349 GGTTACACCATCATCGACTCCGTCAAGAACAACTCCGGTTGGTCCATCGGTATCATCTCC 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36 TCTITCATCGTCTTCTTCATCGTCTTCTCCATCGTCGTCTTCATCGTCGTCTTCATCGTC 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            409 AACTTCCTGGTCTTCACCCTGAAGCAGAACGACTCCGAGCAGTCCATCAACTTCTCC 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACGACATCTCCAACAACGCTCCTGGTTACAACAAGTGGTTCTTCGTCACCGTCACCAAC 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACATGATGGGTAACATGAAGATCTACATCAACGGTAAGCTGATCGACCATCAAGGTC 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AICHEGROTHCHICATCATCGTCTTCTTCATCATCGTCTTCTTCTTCTTCTTCTTC 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGAGTTGACCGGTATCAACTTCTCCAAGACCATCACCATCGAGATCAAGAAGATCCCA 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACACCGGTCTGATCACCTCCGACACACATCAACATGTGGATCCGTGACTTCTA- 707
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m
                                                                      DB 17; Length 891;
                                                                                                                                                                 423; Indels
                                                            Score 100.2; DB 1
Pred. No. 1.5e-11;
                                                                                                                                                                 0: Mismatches
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Stramosba histolytica
Eukaryota; Entamosbidae; Entamosba.
1 (bases 1 to 849)
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AZ546009
AZ546009.1 GI:11167130
                                                            Sect match 7.3%;
Matches 367; Conservative
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General survey sequence.

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105 c 170 9 282 t 50 others
                                                                                                                                                                                                                                           980 GIGACAICCIGIACIICGACAIGACIAICAACAACAAGGCCIACAACAACCIGIICAIGAAGA 1039
                                        920 GTTACAAGATCATCATCAAGCGTATCAGAGGTAACACCAACGACACCAGGAGTCAGAGGTG 979
                                                                                            813 CAAGGAGTACTACATGGTCAACATCGACTACTTGAACAGATACATGTACGCCAACTGCAG 872
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           873 ACAGATCGTCTTCAACACCAGAGGTAACAACAACGACGACGAGGGTTACAAGATCAT 932
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                                                                                                                                                                                                                                                                                                                                                                                                                                   1040 ACGAGACCATGIACGCCGACAACCACTCCACCGAGGACATCTACGCCATC 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Tetraodon nigroviridis"
/db_xref="taxon:99883"
/clone="262H14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            http://www.genoscope.cns.fr/Tetracdon
Location/Qualifiers
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                                                                                                                                                                   804 GAGATACAACAAGGAGTACTACATGGTCAACATGGACTACTTGAACAGATACATGTAGGC 863
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Location/Qualifiers
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Loftus, B., Rang, L., Van Aken, S. and Fraser, C.
Determination of clone end sequences from Entamoeba histolytica
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Coctact. Breadan J Loftus
Department of Enkaryotic Genomics
The Institute for Genomic Research
1912 Medical Connec Dr., Rockville, ND 20850, 19
Tel: 301 888 1208
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Emmall: 9)-10ftus@tigr.org
Clones are derived from the Entamoeba histolytica HM1:IMSS sheared
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1. (hawai 10.900)
Coftwai 1. Van Akmi S. and Praser.C.
Dotembardin of Cohem and sequences from Entamoeba histolytica
HMI:1855 Spesied, DWA Library
                                                                                                                                                                             309 CTTCTGGATCAGAATCAACAAGTGGGTCTCCAACTTGCCAGGTTACACCATCATCGACTC 368
                                                                                                                                                                                                                          369 CGTCAAGAACAACTCCGGTTGGTCCATCGGTATCATCTCCAACTTCCTGGTCTTCACCCT 428
                                                                                                                                                                                                                                                                                                                                          129 GRAGCAGRACGAGGACTCCGAGCAGTCCATCAACTTCTCCTACGACATCTCCAACAACGC 488
                                                                                                                                                                                                                                                                                                                                                                                                                   489 ICCIGGIINCAACAAGIGGIICTICGICACGGICACGAACAAGAAGAIGAAGAIGAA 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              549 GATCTACATCAACGGTAAGCTGATCGACAGTCAAGGTCAAGGAGTTGACCGGTATCAA 608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTICTCCAAGACCATCACCTICGAGATCAACAAGATCCCAGACACCGGTCTGATCACCTC 668
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                                                                        249 CATCGTCACCCAGAACGAGAACATCGTCTACAACTCCATGTACGAGTCCTTCTCCATCTC 308
                                                                                                                           662 CGTCGTCTTCATCATCTTCATCATCTTCATCTTCATCTTCATCTTCATCTTCATCTTCATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             122 CATCATCATCTTCTTCATCATCATCATCATCTTCTAATTCATATCGTCGTCGTTCAT 63
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                      0; Mismatches 341; Indels
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Contact Brendan J Loftwa
Powrienne of Ekvryotic Geometer
Principles of Ec Genomic Research
711 Medica Contex Dz., Rockville, MD 20850, 18
1911 10 1858 208
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47.0%; Pred. No. 3.8e-11;
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Entamoeba histolytica
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DNA library

7.2%; Score 98.4; DB 17; Length 931;

402

BASE COUNT ORIGIN

Query Match

source

PEATURES

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Urushihara,H., Tanaka,Y., Kohara,Y. and Shin-i,T.
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/clone=*dda7gd#
/clone=tbr*fplctyostelium discoideum cDNA library, AP*
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    482 ACAAOGCTCCTGGTTACAACAAGTGGTTCTTOGTCACCGTCACCAACAACATGATGGGTA 541
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              562 TCACCTCCGACTCCGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGG 721
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     899 ACAACAAGGACTICAACGAGGGITACAAGATCATCATCAAGAGGTATCAGAGGTAACACA 958
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                                                                                                   Dictyostellum discoideum.
Dictyostellum discoideum
Dictyostellum discoideum
Barayota, Mycetzosa; Dictyostellum,
1 (bases 1 to 797)
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Bu34597 Dictyostellum discoldeum cDNN library, AF Dictyostellum discoldeum cDNN clone dda/god 5', mRNN sequence.
Bu34597
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   491 CTGGTTACAACAAGTGGTTGTTCGTCACCGTCACCAACAACATGATGGGTAACATGAAGA 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        551 TCTACATCAACGGTAAGCTGATCGACACCATCAAGGTCAAGGAGTTGACCGGTATCAACT 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           611 TCTCCAAGACCATCACCTTCGAGATCAACAAGATCCCAGACACGGTCTGATCACCTCCG 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       500 TCTTCATCATCTTCATCATCTTCATCATCTTCATCATCGTCTTCATCTTCATCTTCTTCA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                571 ACTCOGACAACATCAACATGTGGATCCGTGACTTCTACATCTTCGCCAAGGAGTTGGACG 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7.1%; Score 97.4; DB 17; Length 900;
49.0%; Pred, No. 6.2e-11;
tive 0; Mismatches 271; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    731 GTANGGACATCAACATCCTGTTCAACTCCTTGCAGTACACCAACGTCGTCA 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             380 TCATCGTCTTCATCATCGTCTTCGTCTTCATCTTCATCATCTTCATCA 330
                                                                                                                                                                                                                                                                                       /organism-"Entamoeba histolytica"
                                                                                         High quality sequence start: 20
High quality sequence stop: 890.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:5759"
                                                                                                                                                                                                                                                                                                                              /strain="EM]: IMSS"
         Seg primer: M13-Forward
Class: shotgun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 49.0
Matches 260, Conservative
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Query Match

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Search completed: November 7, 2002, 13:45:20 Job time : 1959 secs